

Los Angeles Public Library,
Serials Division,
530 S. Hope St.,
Los Angeles, Calif.

MANUFACTURERS RECORD

OCT 26 1942 **LOYALTY**

LOS ANGELES PUBLIC LIBRARY

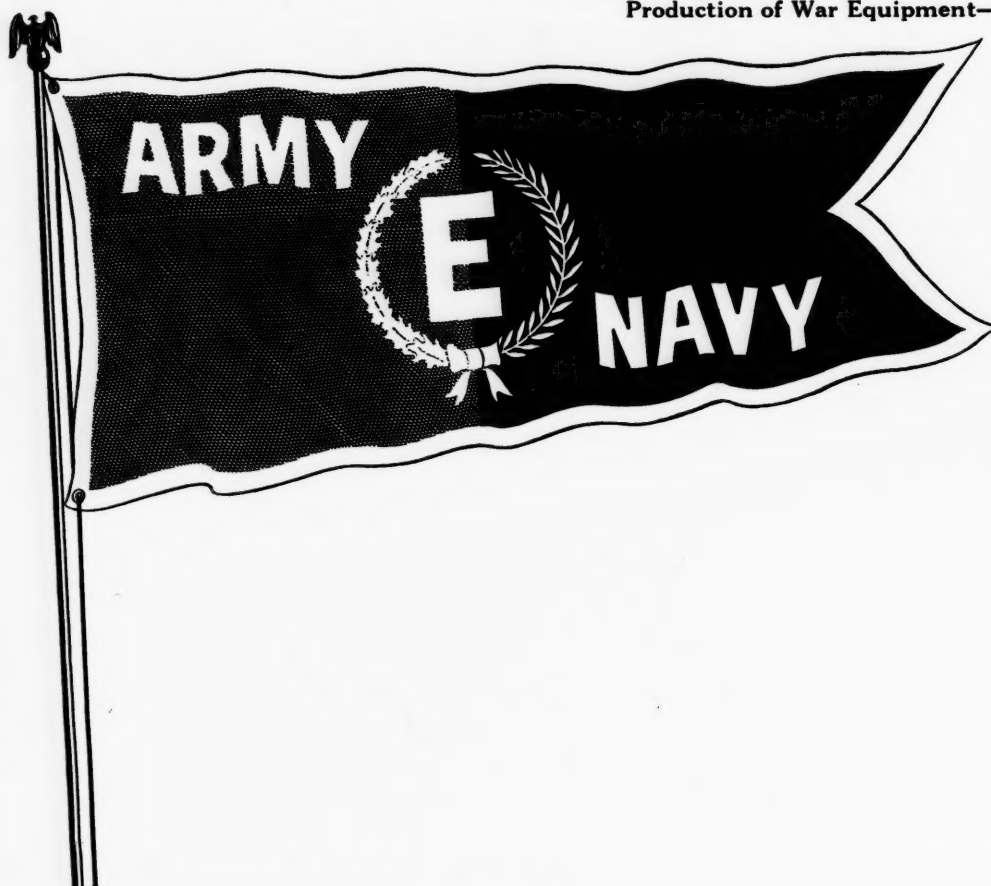
It is easy to criticize.

***It is easy to yield unthink-
ing obedience.***

***It is not so easy to think and
criticize and obey. But it
can be done.***

The word for it is loyalty.

"—For High Achievement in the
Production of War Equipment—"



GREATER THAN THE AWARD IS ITS CHALLENGE

The men and women of the Virginia Bridge Company are proud of the Army-Navy Production Award Flag now flying above our Roanoke plant. Proud too of the "E" for excellence pin we are privileged to wear.

Virginia Bridge

STEEL STRUCTURES
ALL TYPES

But we do not forget YOU—our customers and friends, whose patronage and cooperation prepared us to achieve this distinction, and we gladly share the honor with you.

Strengthened by the knowledge of your loyalty and cooperation we accept the challenge the award presents, and our future goal will be the addition of stars to our Flag by hard work, better work, increased production and any sacrifices that victory may demand.



VIRGINIA BRIDGE COMPANY

Roanoke Birmingham Memphis New York Atlanta Dallas

UNITED STATES STEEL

POWER

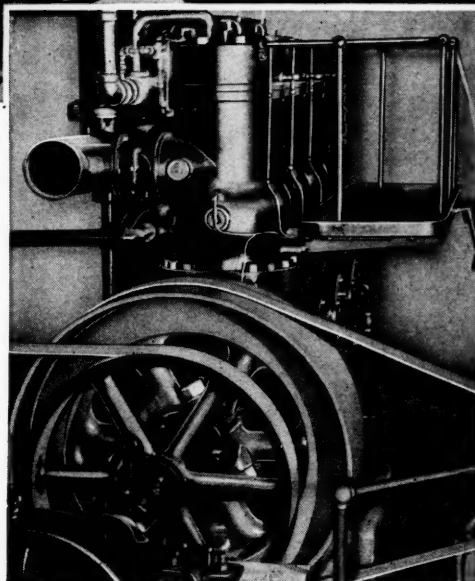
...TO FINISH THE SCRAP!



SCRAP metal helps win wars! To simplify handling at its Portland, Me., plant, the Harcon Iron and Steel Company compresses old metal into compact 400-lb. cubes. And it takes plenty of reliable power to do the job!

For "power to finish the scrap," a 180-hp. Fairbanks-Morse Diesel is direct-connected to a pump which actuates a mammoth hydraulic press. It also drives an F-M generator which provides electricity for lighting.

If you require extra power for war production, use your priority to buy Fairbanks-Morse Diesels. They assure *low unit power costs* . . . plus no stoppage, no breakdowns, no letdowns — *now* or later! Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago, Illinois.



• Compact 180-hp. F-M Diesel Power Plant at Harcon Scrap Metal Yard operates pump, generator, and compressor.

FAIRBANKS-MORSE



**DIESELS
MOTORS
SCALES
PUMPS**

OCTOBER NINETEEN FORTY-TWO

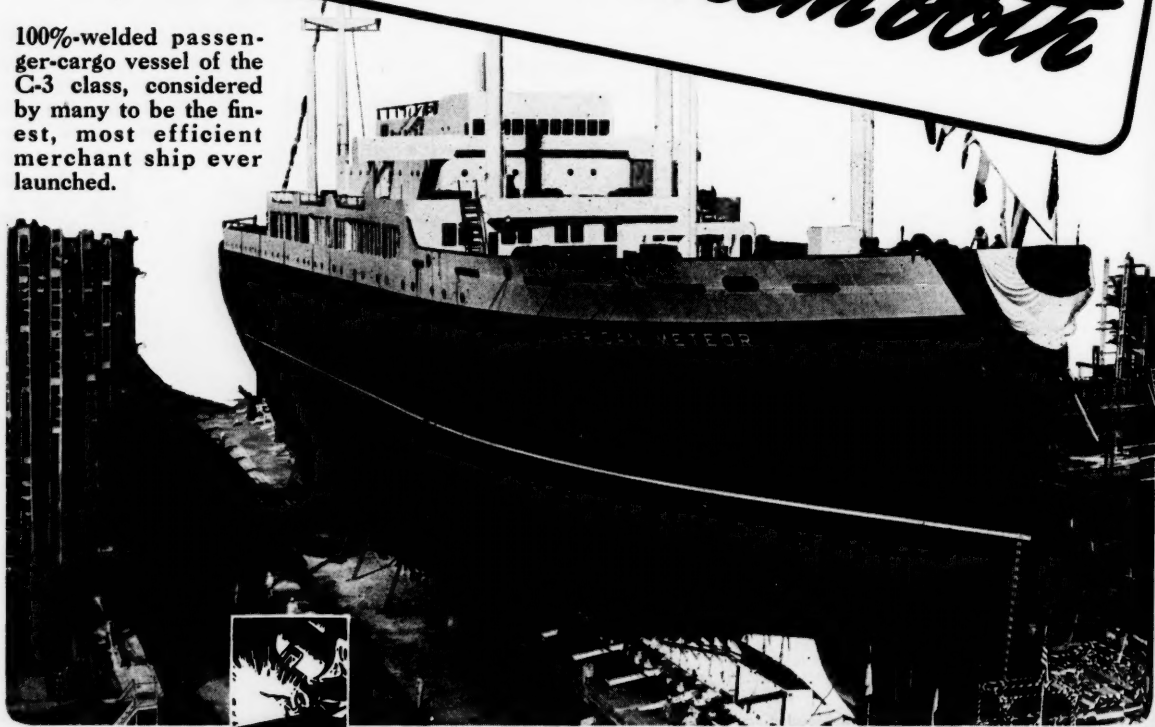
3

The Dinner Key Hangar of the Pan American Airways System easily accommodates the largest "Clipper Ships." Structural steel fabricated and erected by Ingalls.



Ingalls built them both

100%-welded passenger-cargo vessel of the C-3 class, considered by many to be the finest, most efficient merchant ship ever launched.



THE INGALLS IRON WORKS COMPANY

BIRMINGHAM, ALABAMA

Subsidiary Companies and Divisions

THE STEEL CONSTRUCTION COMPANY • THE INGALLS SHIPBUILDING CORPORATION • BIRMINGHAM TANK COMPANY

Shipyards: PASCAGOULA, MISSISSIPPI • DECATUR, ALABAMA

Branch Offices: NEW YORK • WASHINGTON • PITTSBURGH • ATLANTA • NEW ORLEANS

MANUFACTURERS RECORD

Established 1882

CONTENTS

OCTOBER, 1942

Volume 111, Number 10

EDITORIALS

Loyalty	Cover
Things That Interest Us	6
After the War—What?	23
An Open Letter to the President	25

FEATURE ARTICLES

A Steel Industry Accomplishment	26
The Fifth and the Sixth Freedoms by Dr. John J. Wicker	28
The Browns and the Jones by Will Witmor	30
A Flying Boat Plant in the South	31
Aluminum Production in Arkansas	32
Wartime Production of Civilian Goods in England	34
Container Industry Meets War Needs	36
South's Construction Contracts Gain	38
War Contracts and Allocations in the South	41
New Industrial Plants and Expansions in the South During September	42
New Priorities Put in Effect During September	44
Increasing Box Car Payloads	45

DEPARTMENTS

New Methods and Equipment	50
Industrial News	52
Trade Literature	52
Index for Buyers	70
Index of Advertisers	72

MANUFACTURERS RECORD PUBLISHING CO.

Other publications: *Construction (daily)*, *Construction (monthly)* and *Blue Book of Southern Progress*.

Main Office: Candler Building, Baltimore, Md.
Phone: LExington 7065

Branch Offices: New York—393 Seventh Ave., Room 1415. Phone: Penna. 6-3515.
Chicago—26 East Jackson Blvd., Room 712. Phone: Harrison 5867.
Cleveland, O.—Caxton Building, Room 801. Phone: Main 3341.

Subscription Rates: One Year \$2.00. Two Years \$3.00.
Single Copies 25c, back numbers over 3 months old 50c.

Member A. B. C.

Entered as second class matter at the postoffice, Baltimore, Md., U.S.A., under act of March 3, 1879. Volume 111, Number 10 Monthly.

"Pneuphonic" HORNS

Distinctive Alarms

For Factory Use or

Air Raid Service



Unique Tone Quality
Powerful Sound Capacity
Reliable Performance
Low Air Consumption

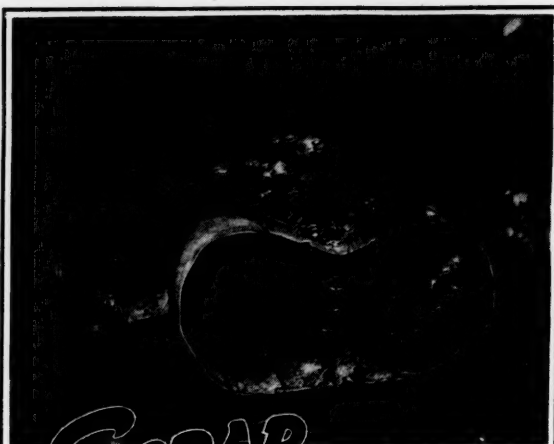
AVAILABLE IN

varying combinations, ranging from a single bell to any multiple group, or chime combination ★ Operated by a simple lever valve, foot valve, or electrically controlled from a distance by push button and magnet valve ★ Performance is satisfactory on pressures from 40 to 100 pounds ★ To supply air for these horns, or for any pneumatic requirement anywhere, we make a complete line of compressors in sizes up to 200 C.F.M., steam-, motor-, or belt-driven. Efficient, reliable, and durable.

Westinghouse
AIR BRAKE CO.
Industrial Division
PITTSBURGH, PA.

Builders of Pneumatic Control
Apparatus for 73 Years

OCTOBER NINETEEN FORTY-TWO



SCRAP

LEFT WHERE

HITLER WANTS IT

... Rusting away all over this country ... can help lose the war for America. For half of every tank, gun, ship, and submarine is made from scrap.

Some steel furnaces are down, and others are working from hand to mouth, because there's an acute shortage of scrap metal, which is remelted with pig iron to make our machines of war. Unless 6,000,000 additional tons of scrap is uncovered and turned in promptly, the tanks and guns and ships so desperately needed cannot be produced. Result: a longer, harder war.

There is enough scrap in this country to see us through — millions of pounds of it in the form of wornout or obsolete machinery, rusted old pipes, fencing, pumps, chains, and boilers (like the abandoned 1,700 pounder pictured above, which contains enough steel to make half of 84 good American machine guns). America's scrap must be turned in. Every factory, warehouse, store, shop, farm, attic, basement and garage must be combed for every last pound of scrap, if we are to give our fighting men the fighting machines they must have to win. The time is short.

From the beginning, the Norfolk and Western Railway has cooperated in the nation's campaign to salvage scrap for America's war effort. This Railroad is accumulating and turning back into productive channels approximately 5,500 tons of scrap metal per month—and is reclaiming everything down to the smallest nut and bolt.



Norfolk and Western Railway

PRECISION TRANSPORTATION
CORP. 1942 N. & W. RY.

Things that interest us

Our own experiences during the past few weeks interest us so much that we want to tell as many people as possible about some of them.

We have visited Army camps and arsenals, munitions plants and others producing war materials, talked with officials coming from and going to foreign shores. It has been interesting to us. Maybe we can make it a bit interesting to you.

To begin: The "Boy Scout" army of one and two years ago has been replaced by a hard boiled bunch of "babies" who are being taught things that we fellows of the last war never dreamed about. They are really making soldiers now, and they are making men as well. These men are neither abused or coddled. They are being trained, physically, mentally and morally. There will be a lot of the right kind of Americans turned out of this man's army when the war is over. And there will be a lot of darned hard men to lick fighting in it while the war lasts.

These men who are making up our army are being taught by young energetic officers who know their jobs. They associate and fraternize with their men, gain their confidence and friendship. One post commander, a colonel, could not have been more than thirty-five years of age, and he knew his "stuff."

Of course we can not tell you of some of the things that we saw and heard in government arsenals but they do not spell happy dreams for the Axis. American scientists and technicians are not wasting their brains inventing new flavors for chewing gums. They are now perfecting tools for war that will amaze the world. Remember this is a mechanized war and will be won by machines operated by skilled men. The machines are being conceived, designed and built. The men are being trained. They are being trained not only to operate the machines, not only to "take it," but to "dish it out."

The morale of munitions and war materials plants workers is good. The caliber of their executives and foremen is splendid. Theirs is the real hard job because they have to educate so many green workers so fast. It is a heart breaking job and, in many cases is being done by men well past middle age. These workmen and their foremen are not worried about the outcome of the war, they are not worried about their ability to produce. Their only worry is the possibility of labor agitation that may originate among a paltry few of their number or from some outside source.

Last night we talked with an old friend who was in Holland when it was invaded. He is flying to England in a few days. His experience includes four years in Java and eight in Sumatra. He has been home for the past year and has seen many of the things that are being done. Incidentally he flew in France in the last war. During our talk we agreed that this war would last for at least three more years, that the Germans would quit if their own territory was ever invaded

MANUFACTURERS RECORD FOR

and that the Japs could only be licked by knocking them completely out.

Our friend was tremendously enthusiastic about Madame Chiang Kai Shek. He considers her to be the world's greatest woman and finest lady. He hesitated to ascribe any of her husband's success to her leadership but unhesitatingly attributed it to her support and counsel. He thinks that the Japanese can be driven out of China by a combination of Chinese spirit and manpower augmented by long range army American air power and the supplies necessary to support it.

Others with whom we have talked think that Vichy-France must be ignored. It is a puppet government controlling colonies that should be and can be of use to the United Nations and that are quite definitely threats to them while under German control. These should be taken over before it is too late.

India, that apparent seething hotbed of rebellion, is not in an internal condition as critical as the press makes it seem to be. The real agitation is, and has been instigated by a comparatively few men. The real complication is religious—Hindu and Mohammedan. It can become critical but only if power is granted by the British Empire to one sect or the other.

Now we have rambled on all over the globe but we have tried to put in print some few of the things that we have recently seen and heard.

Before leaving you for this month, we would like to call your particular attention to some of the articles printed on other pages. The first one is really nothing else but pictures, but what a story those pictures do tell—an accomplishment the steel industry and all phases of private enterprise may well be proud of for it is no small job to have plates ready for shipment to a shipyard in less than twenty-four hours after they existed only as old cannons. This just shows what can be done with scrap metal if only we get enough of it together.

The announcement that a large flying boat plant now being built in the South is likely to be a permanency is welcome news especially as it follows so closely on the heels of another announcement concerning the possible permanency of an airplane plant in Georgia. If this keeps up it will not only help the South's economy but be a sound foundation on which to build a good southern aircraft industry.

Speaking of industry, we hope you will find the article about wartime production of civilian goods in England as interesting as we did. Frankly, the future of industrial production has worried us quite a lot and while we still don't feel much better about it, after reading what they are doing in England, we at least believe there is some hope for our own future if sufficient intelligent thought is given to the subject.

Lastly, there is "The Browns and the Jones" presenting a lively topic of current conversation. A difficult matter you say? Yes, that is true but there is a great deal to be said for the Brown's viewpoint.



ATTENTION, INDUSTRY!

TODAY, IN OUR RACE against
TIME, industrial expansion re-
quires rapid, dependable and
accurate planning.

THERE EXISTS IN THE Coastal
Southeast the vital, time-saving
elements which the present situ-
ation demands.

**THE COAST LINE'S DEVELOP-
MENT SERVICE** has essential
information concerning the
Southeast which should be help-
ful in selecting industrial loca-
tions.

*For complete and confidential
data, write, telegraph or call:*

R. P. JOBB

*Manager Development Service
Wilmington, N. C.*

ATLANTIC COAST LINE RAILROAD

OCTOBER NINETEEN FORTY-TWO

INDUSTRIAL SURVEYS

in the
**Seaboard
Southeast**

ALA.

GA.

FLA.

VA.

N.C.



Detailed reports will be furnished on specific sites upon request. We offer all the benefits of an experienced plant location service without obligation or cost. Inquiries kept strictly confidential. Write:

Warren T. White, General Industrial Agent
Norfolk, Virginia

FOR MANY YEARS
we have helped industry by furnishing reliable surveys on industrial locations in the Seaboard Southeast.

MORE RECENTLY we have likewise assisted numerous Government agencies by supplying authentic reports on various parts of our territory.

OUR PRIME OBJECTIVE:—
To contribute to our Country's war effort in every possible way until victory is won.

INDUSTRIAL DEPARTMENT
SEABOARD *Air Line* **RAILWAY**

THIS IS WORTH FIGHTING FOR



The right to SPEAK WITHOUT FEAR

FREEDOM OF SPEECH is a keystone in the American way of life. Take it away and the torch of liberty will surely flicker out.

The conquered people know—now—how precious this freedom is. Today, they can't speak freely without fear of the bite of a whip, the slow torture of a concentration camp, or death.

But freedom of speech will not be taken away from Americans! To preserve that liberty we're working and fighting and sacrificing as never before. What's more, we're going to win this war!

Our enemies can find smashing proof of that in the courage and the determination of American fighting men; in the overwhelming number of planes and tanks and guns that are rolling off American production lines; and in the huge volume of war materials and supplies and fighting men being transported smoothly and efficiently by the American railroads.

The Southern Railway System, like other American railroads, has pledged its all to the winning of this war. We're terribly in earnest about it, and therefore we are placing war transportation needs ahead of everything else.

Last year the Southern carried more freight than it has ever carried before in all its long history, 31 percent more than

it carried in 1940; and 46 percent more than it carried during World War I; and more than twice as much as it carried in the depression years of 1932-33-34. Most of this increase has been due to war demands; raw materials for armament, tank and airplane factories; materials and supplies to equip, and food to maintain, our rapidly expanding land, air and naval forces.

In the first half of this year the volume of freight handled by the Southern again broke all records, exceeding the first half of 1941 by 37 percent and topping by far every previous mark of a half century of service.

We are proud of this achievement. Our pride is the kind that drives us on to even greater achievements. And in so serving the nation with our best in this great emergency, we are learning how better to "serve the South" when Victory has been won and the God-given right of free men to speak without fear has been guaranteed for the generations to come.

That is worth fighting for!

Emory E. Davis

President.

SOUTHERN RAILWAY
SYSTEM

THE SOUTHERN SERVES THE SOUTH



FOR RAPID STOCK REMOVAL TABLE TRAVERSE SHOULD BE ABOUT $\frac{1}{4}$ OF THE WHEEL WIDTH FOR EACH REVOLUTION OF THE WORK

SET TABLE DOGS SO THAT NO MORE THAN $\frac{1}{4}$ OF THE WHEEL RUNS OFF THE WORK



INSPECT, CLEANOUT, AND LUBRICATE CENTER HOLES

REPLACE OR REGRIND CENTERS WHEN SCORED

On the grinding line



DO NOT FORCE THE WHEEL ONTO THE SPINDLE

TIGHTEN SPINDLE NUT ONLY ENOUGH TO HOLD WHEEL FIRMLY

... Another NORTON SERVICE in the Interest of Apprentice Training

REPRODUCED here are three typical bulletins from the series being distributed bi-weekly by Norton Company. Their cartoon treatment presents fundamental grinding facts in an interesting, easy-to-remember style for new grinding hands. $8\frac{1}{2} \times 11$ " in size, they can be posted on bulletin boards or given to all grinding machine operators.

Other Norton educational facilities include informative booklets on various types of grinding, motion picture films (sound and color) and training courses at the Worcester plant. All of these facilities are available to the war industries through Norton distributors.

NORTON COMPANY, WORCESTER, MASS.

W-887

NORTON ABRASIVES

Performance LIKE THIS..

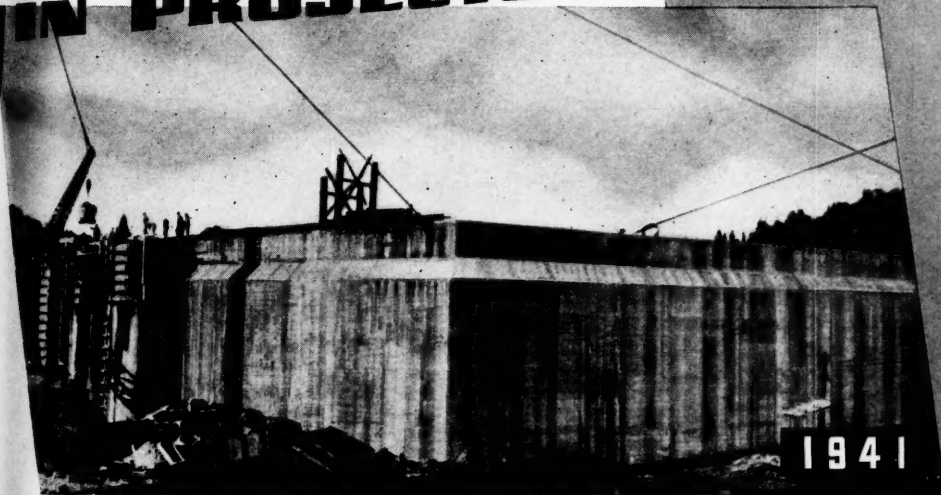


One of many convincing reports received from leading railroads:

July 14, 1942—"Experience over a seven-year period shows that Pozzolith produces increased workability and easier placeability, even though we reduced mixing water as much as 15-20%. A noticeable decrease in segregation defects enabled us to finish the concrete faster and at a lower cost. Regular inspections indicate that the concrete in which we used Pozzolith has higher durability because to date we have no knowledge of maintenance expense on any of the concrete where this material was used."

ERIE RAILROAD COMPANY
Engineering Department

HAS RESULTED IN THE USE OF **POZZOLITH** (CEMENT DISPERSION) IN PROJECTS LIKE THIS..



Greater durability, of paramount importance in building important projects like this dam of Mac Laren-Quebec Power Company, has been demonstrated time and again in the performance of Pozzolith concrete.

Speed, another vital factor in today's construction program, results from the easier placeability, earlier stripping of forms and faster finishing made possible with Pozzolith.

Cement Dispersion—important technological development—is helping deliver war materials sooner . . . saving millions of ton-miles of vital transportation space . . . reducing cost of construction . . . producing concrete of unusual strength and durability.

The dispersion principle, responsible for modern developments in synthetic rubber, plastics, steel, ceramics and many other basic materials now brings important benefits to all concrete.

Used in over four million yards of concrete since 1932, Cement Dispersion has demonstrated its ability to meet today's construction demands—speed, economy, durability.

Research Papers No. 36—"Economics of Cement Dispersion" (for mass concrete) and No. 39—"Cement Dispersion and Air Entrainment" (for runways and pavement), also illustrated Pozzolith booklet sent upon request.

THE MASTER BUILDERS COMPANY

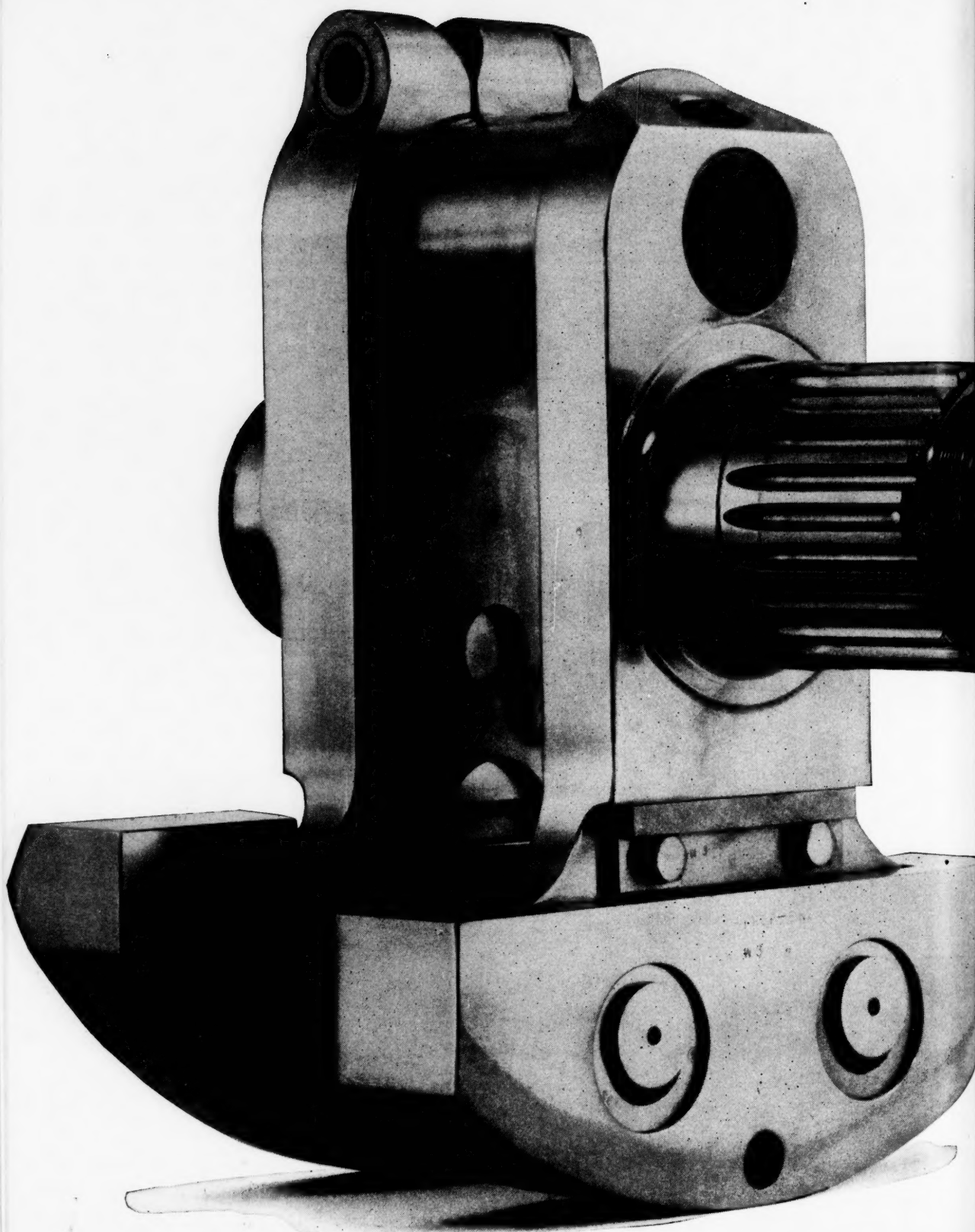
CLEVELAND, OHIO

TORONTO, ONTARIO

FOR **MASTER**



BUILDERS



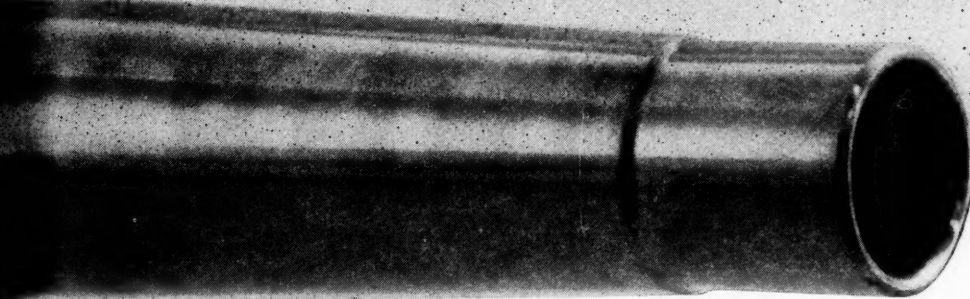
THE CARBORUNDUM

REG. U. S. PAT. OFF.

W
in
th

Y
ma
wa
he
me
Ho
gri
the
the
for
at
An
wh
bec
Ca
wh
pro

What's the most important half second in the life of a crankshaft?



YOU'RE looking at one of the sweetest pieces of precision engineering that ever stirred a craftsman's heart. Accurate as the balance wheel of your watch, this airplane engine crankshaft will soon be helping some pilot show the enemy what American men and machines can do.

However, in the split-second in which the final grinding operation on the shaft was completed, had the operator taken off just 0.001 inch more than the minimum diameter specified for the bearing, for instance, the shaft would never have seen action at all. Its value would have been reduced to scrap. And the staggering total of man and machine hours which had gone into it up to that point would have been worth absolutely nothing.

Can you find a single operation in war production where so much is at stake as in the final grinding process? Because of the key role it plays in war

output, the grinding operation is one of the first places to check for ways to conserve materials, effort and time.

Make certain that your grinding machines are being operated with the utmost possible care. Make certain too that you are using the right grinding wheel for the particular job at hand. It is a *Weapon of Production* and should be properly used for maximum effectiveness.

Manufacturer's recommendations should be carefully followed on wheel speed, work speed, rate of infeed, wheel traverse, proper coolant and wheel grading (grit, grade and bond). Only the correct balance of these several factors will insure maximum production.

You are cordially invited to visit us at Booth C-122
National Metal Congress Exposition
Cleveland Auditorium, October 12-16.

MC COMPANY, NIAGARA FALLS, N. Y.

Offices and Warehouses in New York, Chicago, Philadelphia, Detroit, Cleveland, Boston, Pittsburgh, Cincinnati, Grand Rapids
(Carborundum and Aloxite are registered trade-marks of and indicate manufacture by The Carborundum Company)



Durable **CONCRETE ROADS** —a vital wartime asset

OLD TIMER

Built in 1916 as an access road to a camp used by state guardsmen returning from the Mexican border, this concrete highway is still serving in World War II.

In these times it is good to know that 100,000 miles of concrete roads are on the job.

Maintenance funds go an average of **THREE TIMES AS FAR** on concrete as on the next most commonly used state road surface.

This saving means the conservation of millions of man-hours of road labor, and vast quantities of maintenance materials, equipment and transportation facilities needed for war.

Concrete roads in general will carry the *heaviest wartime traffic, with the least upkeep cost and the least wear and tear.*

Concrete is helping economically to build needed strength and stamina into main-traveled military and access roads—with little or no steel, and generally with minimum use of transportation facilities for construction.

Our technical staff is ready to assist designers and builders on paving and all types of war construction. We ask that you let us supply any data that will expedite your job or help get maximum service from concrete.

PORTLAND CEMENT ASSOCIATION

Dept. 10-21, 33 W. Grand Ave., Chicago, Ill.

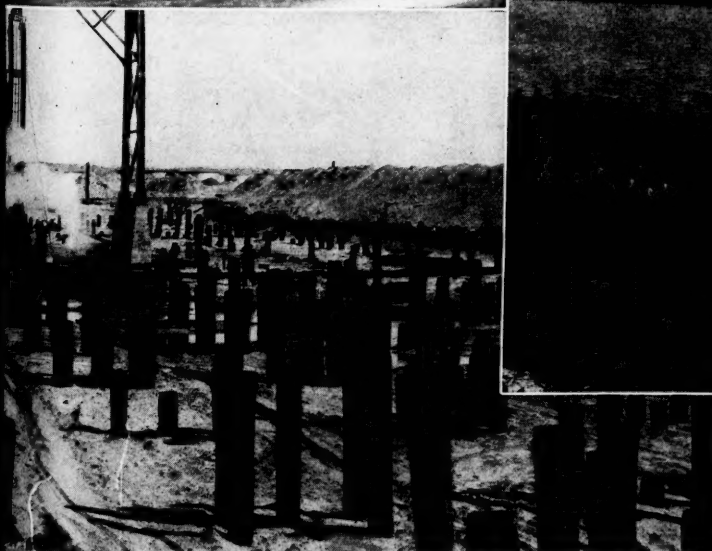
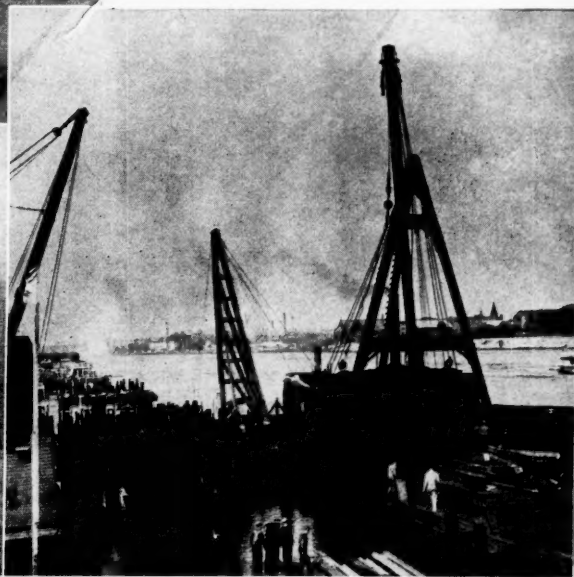
★ **BUY WAR SAVINGS STAMPS AND BONDS** ★

MANUFACTURERS RECORD FOR

Creosoted

PRODUCTS

**SOUND MATERIALS
READILY
AVAILABLE
for
IMPORTANT
CONSTRUCTION**



AMERICAN CREOSOTING COMPANY

INCORPORATED

**COLONIAL
CREOSOTING
COMPANY**
INCORPORATED



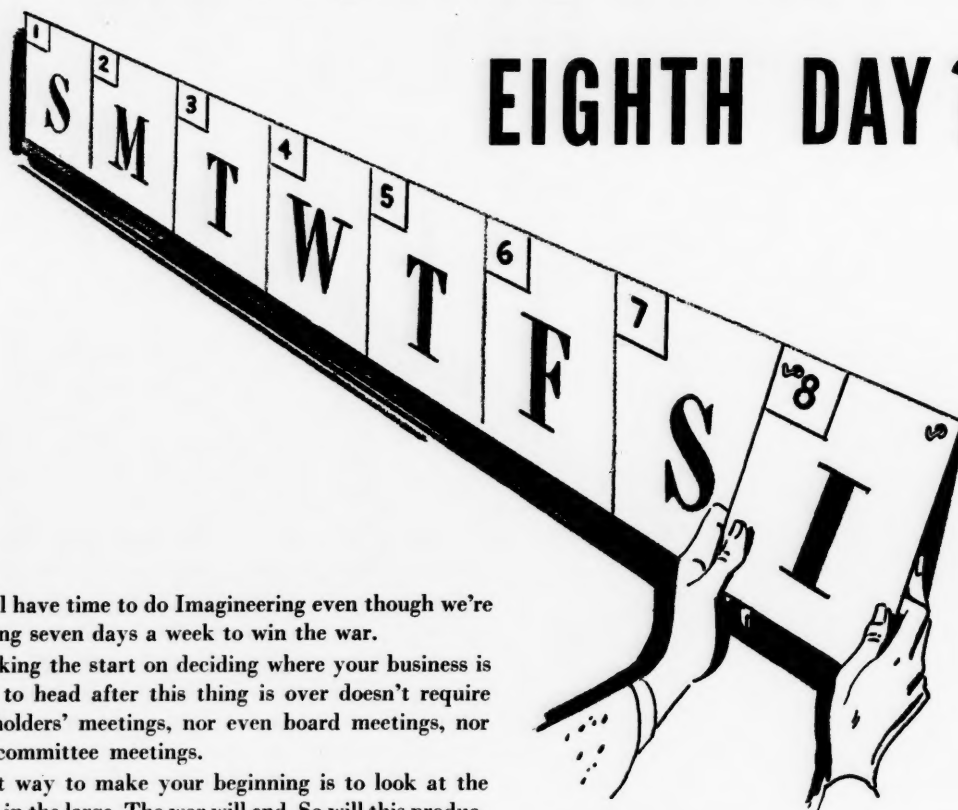
**GEORGIA
CREOSOTING
COMPANY**
INCORPORATED

ADDRESS INQUIRIES TO CHICAGO, ILL., OR LOUISVILLE, KY.

PILES • POLES • TIES • TIMBER

What are you doing with that

EIGHTH DAY?



We all have time to do Imagineering even though we're working seven days a week to win the war.

Making the start on deciding where your business is going to head after this thing is over doesn't require stockholders' meetings, nor even board meetings, nor even committee meetings.

Best way to make your beginning is to look at the future in the large. The war will end. So will this production race on war materiel. Millions now employed at that kind of work will need to keep on working at *something* useful. Other millions will come home from wherever, needing useful and peaceful employment.

In the large, therefore, anyone can see that *new things to make* is a prime need for peacetime.

That makes everyone's individual responsibility clear and direct.

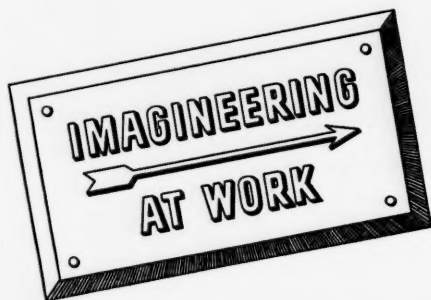
In the eighth day of thinking time everyone has at his disposal, he must produce new ideas for new jobs. He *must* let his imagination soar and engineer it down to earth.

He must, or else—

We believe this deeply at Alcoa. We are using our eighth days that way. We mean that no man shall be out of a job when this thing is over for want of *try* on our part right now.

And if you suspect that some of the results of our future-looking on aluminum would fit into your own Imagineering, let's compare notes for future reference.

ALUMINUM COMPANY OF AMERICA, 2109 Gulf Building, Pittsburgh, Pennsylvania.



ALCOA ALUMINUM



MANUFACTURERS RECORD FOR

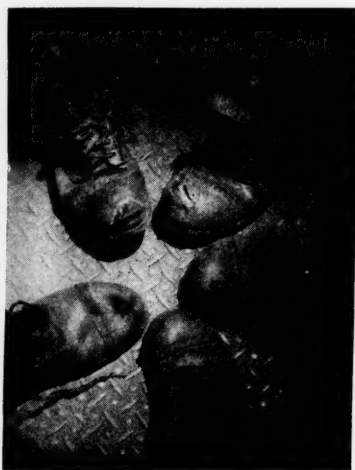
PROTECT the Employee and SPEED Production—

For 27 years Bethlehem has been waging war on the most dangerous saboteur of industrial production—accidents. Today, with the future of the nation so dependent upon top-speed production of war steel, we are stepping up the safety and

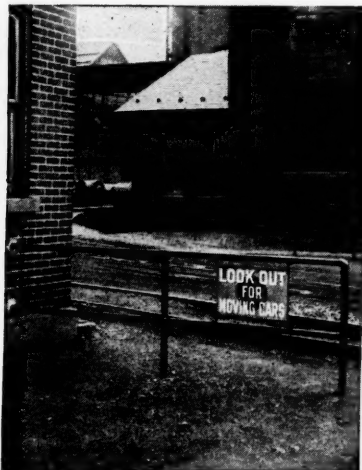
first-aid effort on a widening scale.

First-aid instruction is being given to thousands of employees. Established safety practices are daily being intensified. More safety shoes, goggles, helmets, respirators and fire-proof clothing. More warn-

ing signs and flags to mark danger spots. More safety posters to keep workers safety-conscious. . . . No detail is overlooked which can possibly contribute to the fast, efficient, *safe* production of steel for America's ever-growing war needs.



TOE-SAVING SHOES—Each of these five steel-reinforced safety shoes saved a foot from painful injury and kept one more worker on the job, fit, and able to continue doing his share to keep up the flow of Bethlehem's war production.



DANGER SPOT—But it's been rendered harmless by a short railing and a sign. Instead of stepping out blindly from the corner of the building, workers must cross the track at a point where they can hardly fail to notice an approaching train.



REHEARSAL—This team of first-aid men is giving treatment to an accident "victim" at one of Bethlehem's first-aid contests, held annually for many years. Thanks to this training, thousands of Bethlehem-trained first-aiders are constantly on the alert in steel plants and mines to prevent or treat industrial accidents.



SAFETY SCHOOL—By movies and lectures, Bethlehem employees are continuously being trained in the safest, most efficient methods of handling their jobs. Year after year, this education in the safe way to do every job goes steadily forward.



Has something overhead got you down?

A roof that won't stand up today and do its part . . . is aiding and abetting the enemy!

That's why you find Barrett Specification* Roofs so widely used on plants where vital war production must be kept rolling, and time out for repairs cannot be tolerated.

For since 1854, Barrett coal-tar pitch and felt roofs have demonstrated their outstanding value in protecting plants against rain, snow, sun and fire. The 20-year bond a Barrett Specification Roof carries against repairs and

maintenance is modest.

If you are putting up a new plant . . . or expanding your output by opening up unused sheds and warehouses . . . call on Barrett or your local Barrett Approved Roofer. He's an experienced roofing expert, chosen for his know-how in handling roofing problems of all kinds.

He'll be glad to take the roofing problem off your shoulders "for the duration" . . . and for many years to come.



*Trademark Reg.
U. S. Pat. Off.

THE BARRETT DIVISION

ALLIED CHEMICAL & DYE CORPORATION

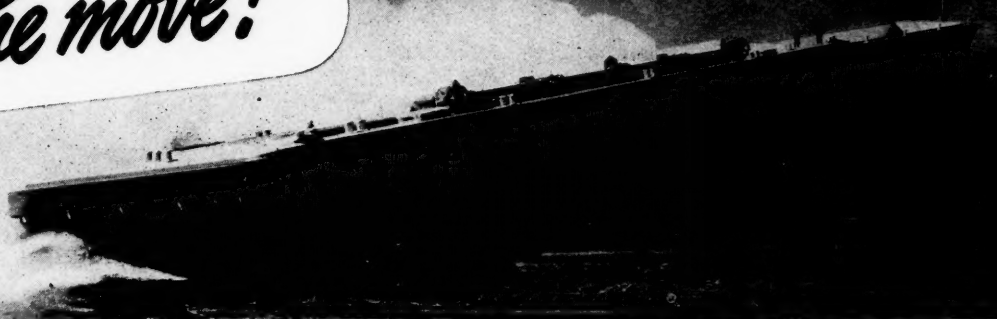
40 RECTOR STREET, NEW YORK

2800 So. Sacramento Ave., Chicago, Ill.

Birmingham, Ala.

ROCK WOOL INSULATION • SHINGLES & SIDINGS • BLACKOUT PAINTS

KEEPING WAR TONNAGE *on the move!*



A FEW years ago the loads being moved today by America's transportation system would have seemed impossible. But war has a way of demanding the "impossible." The challenge is being met by making the fullest utilization of every channel of transport. Inland waterways and other carriers are working as a team, sparing no effort to keep war tonnage on the move.

Countless river and harbor craft are joined in this gigantic task of supply

and interchange. They are carrying an important share of the fuel and raw materials destined for war industries; scrap for blast furnaces; sand, gravel and cement for emergency construction; and the finished products of mills and factories to strategic shipping ports.

To the several thousand American Bridge-built craft already in service, we are steadily adding increased dead-weight tonnage, produced by our recently completed Marine Works.

These modern facilities, we believe, are unmatched. Planned and built with foresight that now stands the nation in good stead, this plant already has set significant records in barge construction.

Today—our entire marine resources are engaged in construction for war.

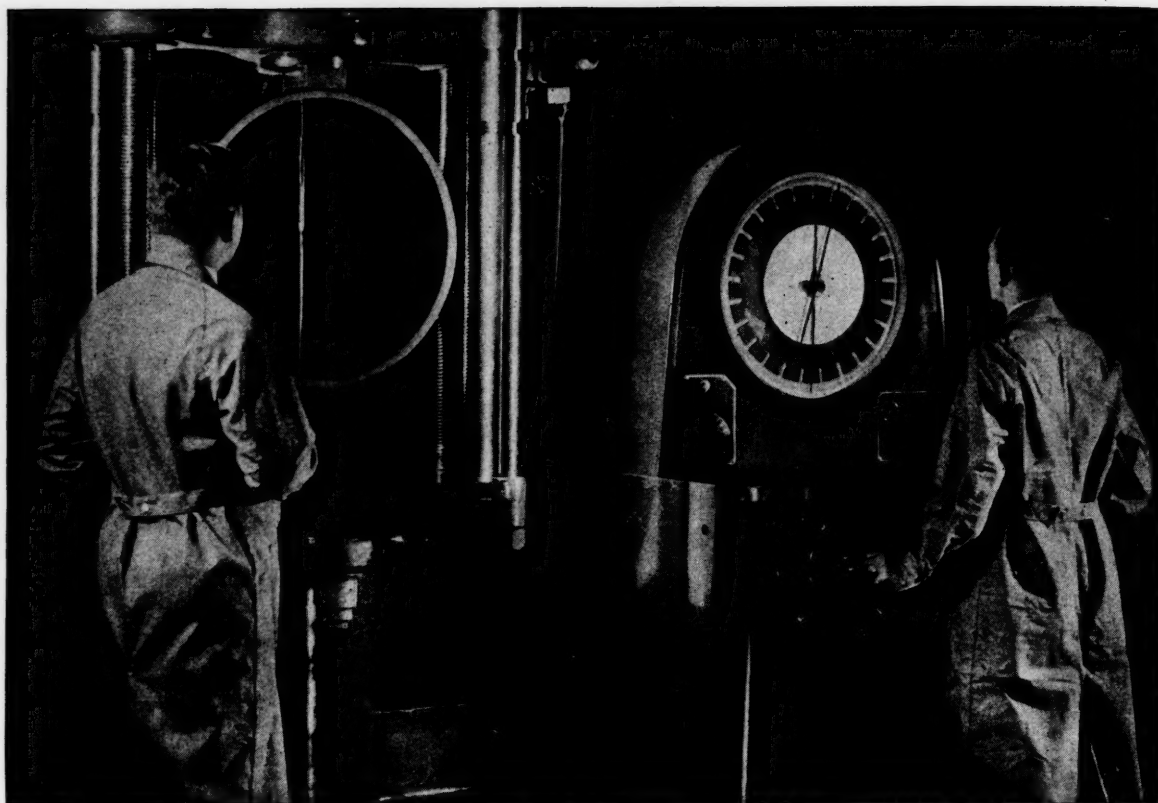
Tomorrow — these same resources of men and equipment will stand ready to serve with equal efficiency the transportation needs of our nation at peace.

AMERICAN BRIDGE COMPANY

General Offices: Frick Building, Pittsburgh, Pa.

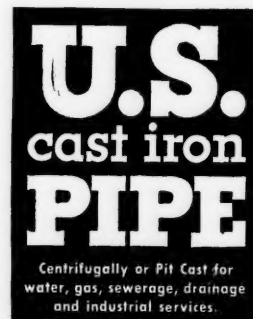
Baltimore • Boston • Chicago • Cincinnati • Cleveland • Denver • Detroit • Duluth
Minneapolis • New York • Philadelphia • St. Louis
Columbia Steel Company, San Francisco, Pacific Coast Distributors United States Steel Export Company, New York

UNITED STATES STEEL



* This illustration shows the "Ring Test" to determine the modulus of rupture. A ring cut from the pipe is subjected to progressively increased crushing load until failure occurs. Although not a required acceptance test, it is one of the additional tests regularly made by this Company to further check and maintain the quality of its pipe so that it will adequately meet severe service requirements. *United States Pipe and Foundry Co., General Offices: Burlington, New Jersey. Sales Offices in Principal Cities.*

* One of a series of controls in operation at each of our plants, beginning with inspection and analysis of raw materials and ending with tests of the finished product, all subject to the central control of our headquarters staff at Burlington.



THEY WORK TOGETHER—LIKE A GOOD TEAM!



**CELOTEX VAPOR-SEAL ROOF INSULATION
AND CELOTEX BUILT-UP ROOFING
*Provide The Ideal Protection!***

CENTRALIZED RESPONSIBILITY! That's what you get when you buy Celotex Vapor-Seal Roof Insulation *with* Celotex Built-Up Roofing! Both are products of the same responsible manufacturer. Each is developed and applied to obtain the utmost in protection and efficiency from the other.

When the built-up roof is right, it guards against roof insulation trouble. And when roof insulation is guarded against common difficulties, like deterioration and moisture penetration, it won't cause roof trouble. *Centralized*

responsibility makes for perfect team work between the two products—your assurance of long, satisfactory service!

Celotex Bonded Built-Up Roofs are available with ten, fifteen, or twenty-year bond. Celotex Vapor-seal Roof Insulation offers a thermal conductivity of 0.30, and the experience of a manufacturer who has produced more structural insulation than any other in the business. Write for complete information, specifications, and samples. Or consult your roofing contractor. No obligation.



VAPOR-SEAL ROOF INSULATION

BONDED BUILT-UP ROOFS

THE CELOTEX CORPORATION • CHICAGO

OCTOBER NINETEEN FORTY-TWO

May the wreath we have won never wither

THE War Department and the Navy Department of the United States have conferred upon the men and women of Chain Belt Company the highest honor that can be paid to civilians engaged in war work... the Army-Navy "E" for outstanding achievement in production.

Because of our knowledge of the intense determination for Victory which has inspired Chain Belt workers in their willingness to serve and sacrifice, we were not surprised that the award was made. We knew it had been earned

and we are gratified that this just recognition has been given.

The Army-Navy "E" pennant will fly proudly from the Chain Belt flagstaffs; and from the lapel of every worker will gleam the shining badge of honor which the Government has cast to signify individual and collective effort beyond the normal conception of duty.

Chain Belt will endeavor to maintain the pace which it has established—to produce more and more for the triumph of our arms.

May the wreath we have won never wither!

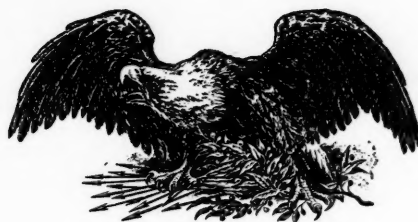


THE LAUREL of this wreath is a symbol of the Victory which Chain Belt workers are determined to win.

THE OAK of the wreath symbolizes the strength of the nation—on the battle lines and on the production front.

CHAIN BELT CO.

OF MILWAUKEE



AFTER THE WAR--WHAT?

Every thoughtful man with imaginative vision can not help but realize that the internal economy of our nation is going to be changed by the present trend of conditions during the war and by the resulting after effects of it.

These same thoughtful men realize that the various elements, business, labor, farmers and professional men and women who go to make up our economic life are being more and more influenced and dominated by professional politicians.

Whether we are tending toward fascism, communism, old fashioned socialism or whether the pendulum of history will swing us back toward laissez faire individualism time alone can tell. One thing persists as a necessity for the future progress and prosperity of the nation. We must improve the caliber of our governmental representatives. It is our fault, not theirs, that they are what they are.

What incentive has a young man to make politics his career? As a matter of fact, where can he go to train himself for such a career? The answer to both of these questions is obvious.

Politics is not a career. In most cases it is the last resort for misfits who can not succeed at any other vocation or it is an adjunct to a business or profession that it can assist.

Now we find politics, so long the step-child of American thinking, taking over the driver's seat. We find schoolboys, castoffs and crackpots in the seats of the

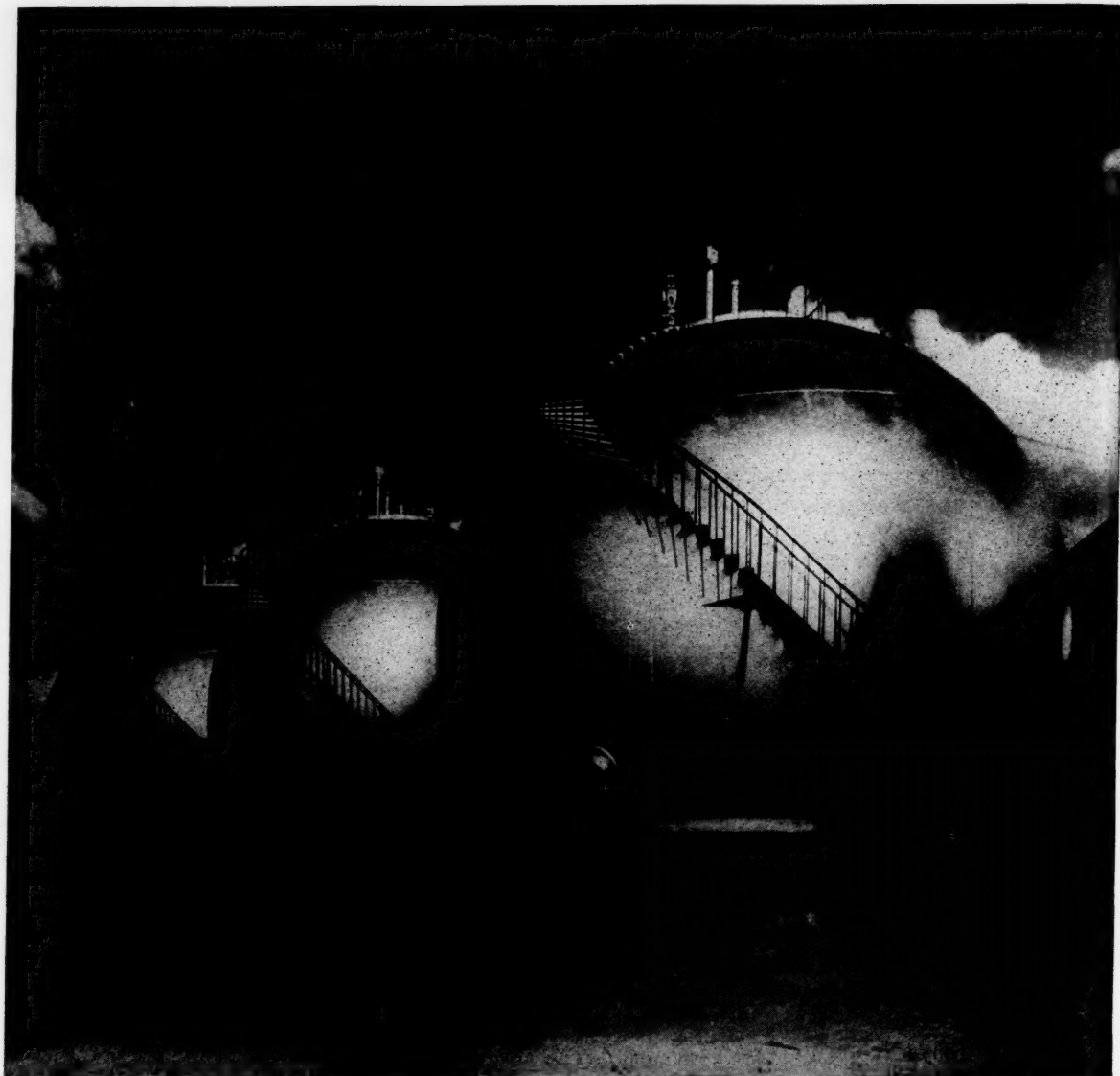
mighty where you and I, common sense fellows, should be sitting. It is not their fault. It is ours.

Anyone who does not think that our government, and the politicians who make it up, are sitting in the seats of the mighty, not tomorrow, but right now, has failed to keep himself informed. The near-sightedness of labor, of the farmers, of business and the lack of attention of the professions have placed the regulation of all of our lives in the hands of mediocre (and we are being kind and gentle when we use that word) men.

Our daily lives, our future plans are being regulated by men whose primary desire is to secure reelection. Personal and local politics control their decisions and actions. National thinking and national acting, more necessary today than ever before, are subordinated to political expediency.

Is this condition the fault of our politicians or is it the fault of the system that has created them? Why should the word "politician" connote opprobrium? Why can not our young men and women be offered careers in elective government work that will attract intelligence, competence and integrity?

We do not think that it is the fault of the system. We think it is the fault of the millions of people who compose it. If every man and woman of us was sufficiently well informed to be a politician twelve months out of every year we would be represented by people capable of properly governing.



PRESSURE TANKS for volatile liquids

In the manufacture of 100 octane aviation gasoline, butadiene for synthetic rubber, and various types of explosives, it is necessary to store and handle volatile liquid materials under pressure to prevent excessive losses by evaporation. Fortunately, oil companies and chemical companies have been using Hortonspheres for over two decades to provide pressure storage in large capa-

cities and Hortonspheroids for 15 years to store liquids under pressures of $2\frac{1}{2}$ lbs. to 35 lbs. per sq. in. The installations made during those years, plus all we can supply at present for critical projects, provide a huge total capacity of pressure storage, all of which is being used to speed the economical production of vital materials needed by our armed forces.

HORTONSPHEROIDS — Smooth spheroids built in capacities of 2,500 to 40,000 bbls. to store volatile liquids under pressures up to 35 lbs. per sq. in. Noded spheroids built in capacities of 20,000 to 120,000 bbls. for $2\frac{1}{2}$ to 20 lbs. per sq. in. Bulletin entitled **THE HORTON-SPHEROID** contains general information on both types.

HORTONSPHERES — Built in capacities of 1,000 to 20,000 bbls. to store volatile liquids under 20 to 100 or more lbs. per sq. in. pressure. Also from 20 to 65 ft. in diam. to store gases under 20 to 100 or more lbs. per sq. in. pressure.

CHICAGO BRIDGE & IRON COMPANY

Birmingham	1530 North Fiftieth Street	New York	3313-165 Broadway Bldg.	Philadelphia	1619-1700 Walnut Street Bldg.
Houston	5614 Clinton Drive	Cleveland	2216 Guildhall Bldg.	Detroit	1510 Lafayette Bldg.
Tulsa	1611 Hunt Bldg.	Chicago	2106 McCormick Bldg.	Havana	402 Edificio Abreu
Greenville	York Street	San Francisco	1040 Rialto Bldg.	Washington	330 Bowen Bldg.

Plants in BIRMINGHAM, CHICAGO and GREENVILLE, PA.

An Open Letter

Manufacturers Record

Baltimore, Md.
October 10, 1942

Hon. Franklin D. Roosevelt,
President of the United States,
Washington, D. C.

Dear Mr. President:

The United States is at war. Every American worthy of the name considers you his Commander-in-Chief. Each one is striving to respect, honor, and obey you as such.

You are no longer president of a representative government subject to political motives. You are Commander-in-Chief of a united people at war.

As soldiers in uniform and mufti, we will obey you. But as we also sincerely desire to respect and honor you as "top kick of the whole show," we think it is only fair to ask you:

Why don't you surround yourself with really capable men who can help you lead?

Why don't you delegate authority to such men so that they may help you lead?

Why don't you realize that this nation is made up of Americans, not labor leaders, farm blocs, star-gazing uplifters, nor economic royalists?

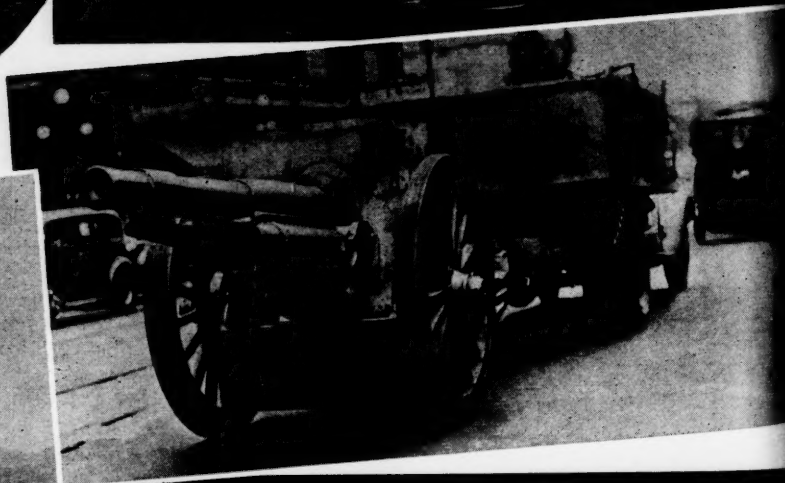
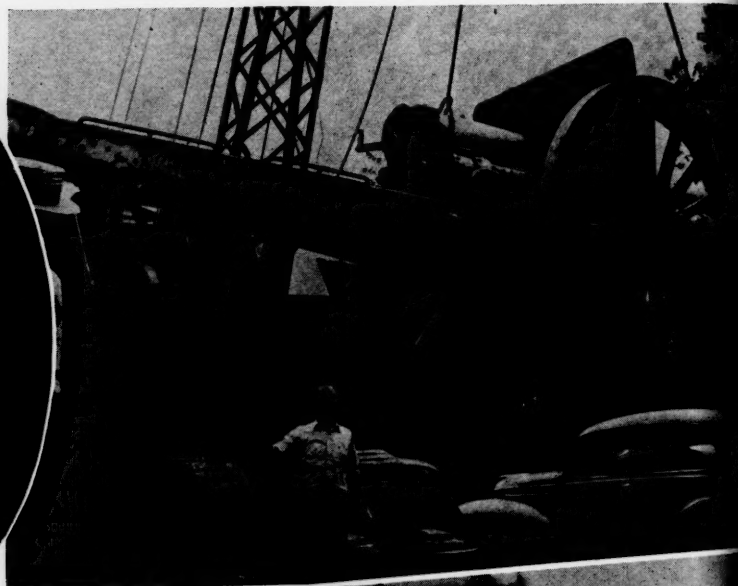
Why don't you realize that all of us, even your critics, want to help you and by helping you help a cause as dear to us as to you?

You've got a tough row to hoe — but you've got a whale of a lot of the right kind of people ready to help you hoe it. Help us to help you.

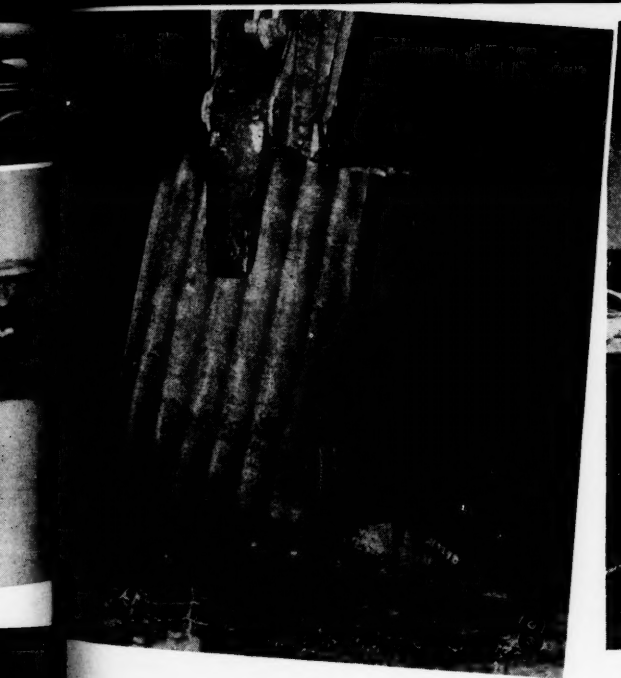
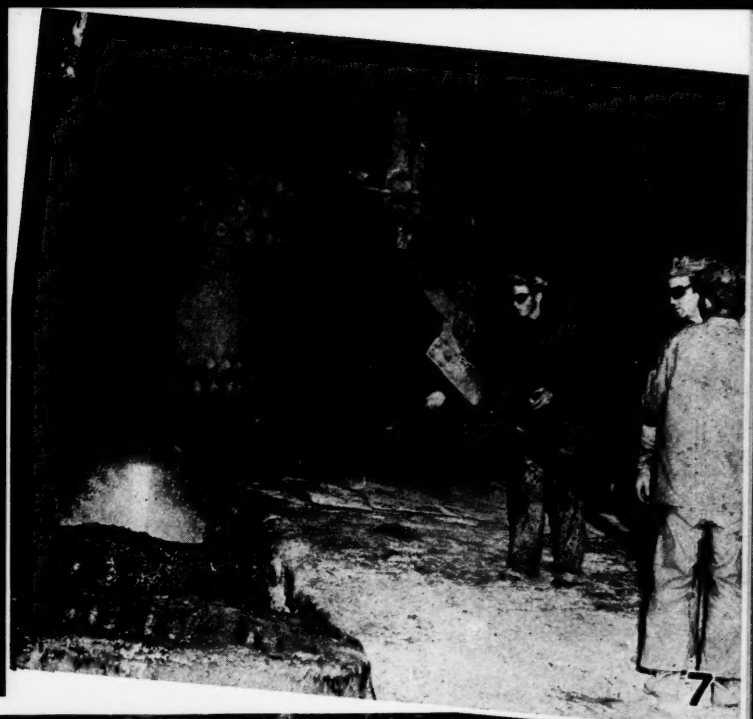
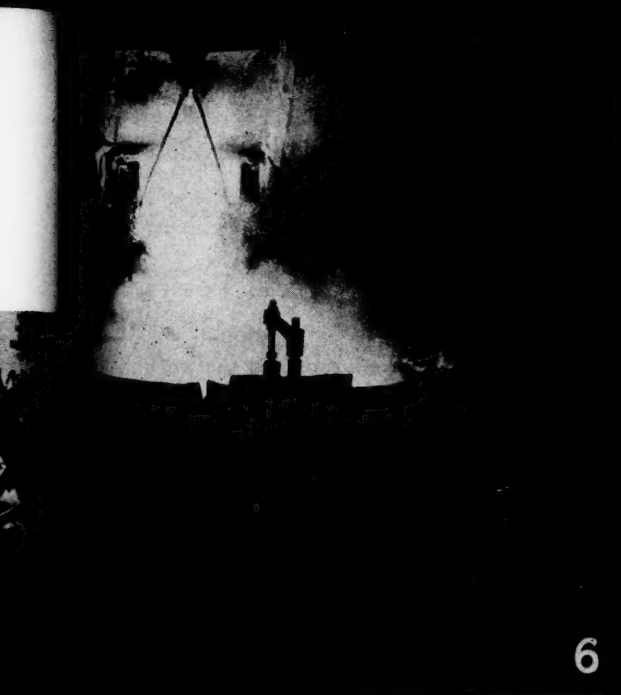
Sincerely yours,

Wm. M. Beury
EDITOR

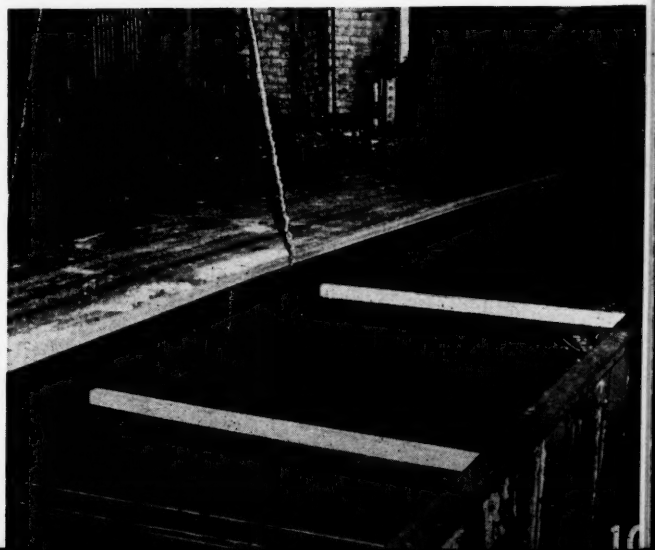
A STEEL INDUSTRY ACCOMPLISHMENT



Nine old
 the parks
 in scrap
 War reli
 howitzer
 cannons
 are being
 Steel Co
 part of th
 the open
 furnaces
 into the
 (8) at 1.
 the old c
 temperat
 rolled in
 (10) at
 Gary W
 rolling m
 nine old



Nine old cannons, which have decorated courthouse lawns and public parks in Gary, Indiana, for many years, return to the steel mills as scrap iron to make steel plate for ships. (1) a Spanish-American War relic is dismantled for shipment to the mill. (2) a World War I howitzer begins its journey to the scrap pile. (3) at 8.30 A.M. the cannons are hauled away to the mills. (4) by 9.25 A.M. the cannons are being dismantled at Gary Works, Carnegie-Illinois Steel Corp., U. S. Steel Corp. subsidiary. (5) 12.00 Noon—the open hearth furnaces get part of the old cannons. All the cannons were charged into one heat of the open hearth furnaces. (6) at 11.20 P.M. out of the open hearth furnaces pours a gleaming cascade of molten steel. (7) at 11.35 P.M. into the ingot molds goes the steel reclaimed from the old cannons. (8) at 1.50 A.M. one of the steel ingots containing all that is left of the old cannons goes into the soaking pit to be brought to uniform temperature for rolling. (9) by 7.05 A.M. the ingots have been rolled into slabs of steel ready for further rolling into ship plate. (10) at 7.25 A.M., 23 hours and 5 minutes after they arrived at the Gary Works and while still warm from their journey through the rolling mills, ship plate made from the heat of steel containing the nine old cannons are loaded onto freight cars ready for shipment to busy shipyards.



The FIFTH and the SIXTH FREEDOMS

RECENTLY Mr. William Green, President of the American Federation of Labor, said that "In addition to the four freedoms announced by President Roosevelt, labor would insist upon a fifth guarantee being written into the peace terms after the war."

Mr. Green went on to say that the "freedom of workers in every land to join free and democratic trade unions, this is labor's own peace plank and no force on earth can stop us from making it a reality."

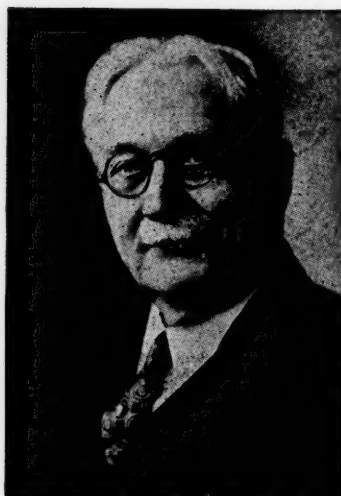
Right you are, Mr. Green. Now I happen to be a Baptist and Brother Green is also a Baptist, so we are brothers in a very special sense. I wish therefore to speak in a free and easy way to a man whom I have always held in high esteem as a level-headed man.

In the first place, I want to say that I am in sympathy with labor unions and all that is good in that great organization.

I have lived a rather long life and I have seen many changes in our country as well as throughout the world.

When I was born capital was very oppressive and inconsiderate concerning a working man's rights. It was the failure to recognize and give justice to toiling men on the part of capital that gave birth to labor unions. Long before the American Federation of Labor was born there were many little organizations popping up over the country demanding rights for the laboring man. Capital was very slow to hear and recognize these rights and I must confess that it was only when labor unions became strong enough to compel attention and to demand rights that they received any really serious consideration at the hands of capital.

It is a pity when an opportunity arises for any class of men that they don't think clearly and see the wise path. Selfishness is a very blinding disease and prejudice often shuts a man in a very narrow prison.



By

DR. JOHN J. WICKER,
*President, Fork Union Military Academy
Fork Union, Va.*

But slowly the working man has arisen until his voice has become one of the most powerful and dominant in the history of the social order of our country.

Again, let me say I am heartily in sympathy with men who have to toil for a living. I am and should be one of the last men in the world to be out of sympathy with labor.

I know what it is to work for fifteen cents a day under the hottest sun Virginia ever knew for 14 hours a day when I was only 14 years old, and when it was announced to me that my job had ended I went home with tears running down my face because I could not earn that 15¢ a day to help my widowed mother. I could tell a long personal story but it is not necessary.

Labor should have, must have, the right to organize in every department of every part of this country, and Brother Green, you

are exactly right when you say that "fifth freedom" should be written into the peace plank giving labor its rights throughout the world.

Having said the foregoing, now may I point out some great injustices and awaiting pitfalls unless labor is wisely guided.

Power is one of the most dangerous things in all the world and requires the highest wisdom to be rightly exercised.

Labor is in danger of committing suicide. Its very prosperity and power have become its largest danger. It is in the same danger that injured capital fifty years ago when capital went down the wrong road.

It is all right to organize and every man must have the absolute right to join whatever labor union under whatever condition is mutually agreed upon, by him and the union.

But I now propose a sixth freedom that should be written in keeping with the American constitution in the new set-up and the new order of things in our country. It is the right of every employer to employ whomsoever he chooses, and the right of every worker to offer his services wherever he can find employment agreeable to himself and the employer. If this is denied by any source whatsoever it is no longer democracy or American but is organized tyranny and that's what we are having now in this country and it is growing in power while red-blooded Americans are growing in resentment and hatred for this monster thing that is arising and will ultimately destroy its own ends.

When capital was in the saddle in complete control and governed the legislative branches of our country from the local community up to the Congress of the United States and when some organized labor forces went on strike then capital hired thugs who were brought in by gangster leaders to beat up the strikers and refuse them the right to strike or return to work, the "Scabs" taking the

workers' places. Thus capital was its own worst enemy.

Now labor proposes, even on a government job, that no man can work on a government job or any other kind of job in our country unless he pays for the privilege. This payment, contribution or rake-off then goes into a treasury that makes no accounting to him or to the government. And after getting the dues, which in many cases are being required to be paid by the employer and charged off against the worker, this fund of millions of dollars is used to elect men to office who perpetuate this form of highway robbery and gangsterism. This is totally at variance with individual rights and the American way of life and our constitution.

It is almost unbelievable that such can be and that men will unite in a strike and often in an assault upon individual rights.

Men must be free to work for whom they please on whatsoever terms they elect, men who are 21 years of age and free Americans and their employers must have the same freedom otherwise we have a dictatorship under the guise of guardianship, which is an insult to the intelligence of any thinking man and at absolute variance with the American way of life.

Years ago we had a money trust and the anti-trust law was enacted against the power of money to combine and organize its influence legally and control without regulation anything that money could do. The anti-trust law rightly has ended that day.

Now we have a proposed muscle trust made up not of a few rich men but millions of workers who propose to organize to dictate to men all over our country whom they can employ and require a man to accept their dictatorship or he will not be allowed to get work. A muscle dictatorship which already has put its hand to the throat of our Government and it is a sad spectacle that politicians seeking votes have destroyed the freedom of our country in order that they may hold their political jobs.

When statesmanship is assaulted by the infirmity of politicians the people are the ones who have to pay for the results and it

is a sorry day indeed when the ideals of a statesman are made by force of numbers to accommodate themselves to the infirmities of politics.

We Must Have A Sixth Freedom

Germany has destroyed the individual. We of our country must not join the Nazi program.

On the other hand we must cultivate our country in the time honored constitutional foundation and structure left us by our fathers, based on an individualism that invited initiative and encouraged every citizen to be at his best. This is in great danger but our democracy and the right of an individual must not be destroyed.

We are at war to clean up things and not to cover them up and freedom of every kind is absolutely essential if we are to continue our onward program.

No man ever earned the price of a pair of shoes picketing—a form of blackmail.

I hope Mr. Green will lead labor on to the heights of permanent prosperity and not over a Niagara of power into the whirlpool of destruction, chaos and revolution.

God gave each man two feet on which to stand and he never meant for a man to go on crutches when he had two good legs. It is only the cripples who need guardianship.

Mr. Green says nothing can stop the onward march of labor's right to unionize throughout the world. His prophetic ecstasy is the outcome of power—a power akin to dictatorship—a very dangerous thing.

The compulsion program is doomed to failure. It has always failed in everything in this world. Men have made war based on the principle of force, with a determination to compel men to do against their wills. It is simply a program of Hitlerism. The voluntary program never fails and it has respect for the rights of the individual without which in a democracy no other program can succeed and a dictatorship will sooner or later breed revolution.

When an American citizen 21 years of age cannot ask for a job, even on war-time government work without getting a permit from a

union organization upon paying a good size price for the privilege, I say emphatically that is racketeering tyranny and is as bad as any act of Adolph Hitler dictatorship. Talk about freedom! Before I would submit to this unspeakable insult to every red blooded American, I would, if I was in business, shut down my plant and give my last drop of blood in a war against organized Hitlerism.

We must have the sixth freedom and America must win this battle or . . . words fail me.

If the "fifth freedom" comes the world over without the "sixth freedom," we will have world war III with a tyranny of masses that will surpass anything the world has ever witnessed. Today our own country is laying the foundation for such a tragedy.

Water Pressure Project to Boost Texas Oil Output

Approval of the first unit of a pressure maintenance project designed to boost the ultimate recovery of crude petroleum from the Nation's most important oil field—the East Texas—by at least 200,000,000 barrels was announced recently by the Petroleum Coordinator for War.

The project is to be undertaken by the East Texas Salt Water Disposal Company as the first segment of a comprehensive program under which the water produced from the East Texas field in connection with the production of oil will be injected back into the lower part of the Woodbine sand in order to maintain bottom-hole pressures.

The production of water, as well as of oil, has so reduced these pressures in recent years that engineers estimate that unless water is reinjected into the formation the field will yield from 200,000,000 to 800,000,000 less barrels of oil than it would if pressures were maintained at proper levels. Moreover, the flowing life of the wells would be shortened, hastening the day when large quantities of steel and other critical materials would be required for pumping equipment.

The Salt Water Disposal Company's plans provide for the daily injection into the Woodbine sand of 90,000 barrels of water. This will be done through six injection wells. Construction is scheduled to start about January 1, and should take from six to eight months. The cost is estimated at about \$500,000.

Ultimately, the company's program calls for the construction of injection facilities having a capacity four times that of the initial project. It is also proposed to purchase existing salt-water injection facilities having a capacity of 160,000 barrels daily, of which about 80,000 barrels is now being utilized.

The BROWNS and the JONES

By
WILL WITMOR

The article that appears on this page and the letter that we quote herewith were inspired by Henry Ritter's article "Are We Mice or Men" in the September issue of the MANUFACTURERS RECORD:

September 30, 1942

Dear Mr. Beury:

I have read Mr. Ritter's write-up in the September issue of your paper on conditions as they exist in our war production plants. I believe them to be the absolute truth. In the last few months I have heard of cases similar to the ones that he has mentioned. As a man who now works for a living and who has been a soldier in the last war I think that these facts should be brought to the attention of the public.

I say "let's take the hillbilly who can handle a shooten iron and put him in the service where he belongs instead of working on ships, tanks and airplanes." He has no experience in the latter and he has some about the former.

C. J. O'DONNELL.

THE Browns and the Jones—of course that is not their names, but they are real people—live next door to one another and each have one son. Tom Brown is in the army somewhere "over there" facing death, disablement or worse. He is a private getting \$50 a month besides his clothes and keep. He is there fighting not only for his life but fighting for you and me—and for Jack Jones.

Why isn't Jack Jones there, you ask? Oh! he can't be spared for he's a defense worker. Yes, he works long hours and sometimes works hard. Its often dirty work too. He proudly sports an "E" button on his coat and thinks he's treated badly because he can't get all the gas he needs and new tires, if not a new car. These he can well afford on his pay plus overtime each week of almost \$100. As a de-

fense worker he considers he ought to be treated better.

To Jack, so far, this war has meant little else but hitherto undreamed of wealth and some slight inconvenience.

Meanwhile, Mrs. Brown says she cannot understand it. She is a little resentful—she doesn't think it quite fair—she only knows that her boy is a soldier subject to orders.

FAIR? Its neither fair nor unfair. Its an abominable disgrace for which we shouldn't even be able to look our fighting men in the face, we should be so ashamed.

We recruit and draft our men to fight. Why should we not recruit and draft other men to produce the necessary guns, tanks, ships, planes and other things needed by our armed forces? Employment in defense plants should be decided by those who are competent to judge whether a man is best suited for active duty or plant labor. If there then be insufficient men for the plants, draft the women. How else can we keep faith with Tom Brown?

Then comes the pay question. If we can only afford to give Tom \$50 a month, then the defense worker too should get only \$50. Supply him with barracks and board just as though he was a soldier. Protect his dependents just as Tom's dependents are protected.

This would put things on a basis of democratic equality and would give us a chance to talk of democracy instead of making it only a hollow boast. But it would accomplish far more than this.

1. It would ease transportation problems and housing problems.

2. It would release much critical

material now needed.

3. It would still rumor of draft dodging.

4. It would lower very materially the cost to the public of war goods production for there would be no high wages with demands for still higher pay, time and a half and double pay beyond the forty-hour week.

5. It would assure real work and no loafing.

6. It would conserve rubber and gas now needed to transport workers and would leave families in their former homes for local employment.

7. Finally it would probably make unnecessary these constant demands for more and more workers in defense industries who wear buttons to show that they are heroes instead of uniforms to prove that they are.

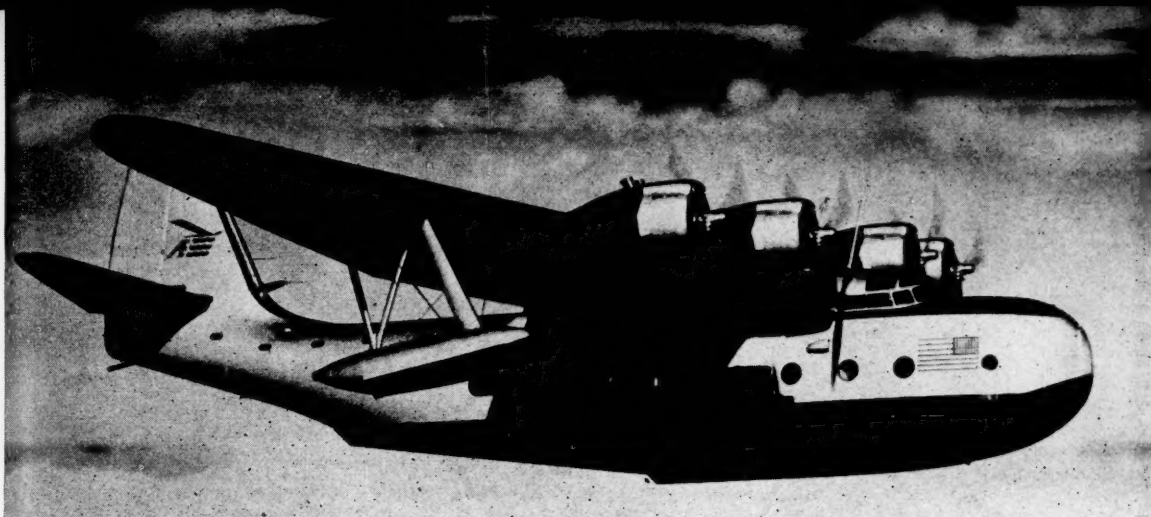
Think these things through for yourself but always remember—you MUST keep faith with Tom. He is the man behind the gun. The man behind the man behind the gun has a pretty soft job.

Cotton Cloth Output Expected to Exceed All Records

A new all-time production record of approximately 12,500,000,000 square yards of woven cotton cloth for the calendar year of 1942 is anticipated by The Association of Cotton Textile Merchants of New York. Such volume would exceed by more than a billion square yards the War Production Board's estimate for last year (11,328,000,000 square yards). It is 4 billion square yards more than the average annual pre-war output from 1935 to 1939 inclusive.

For three-quarters of the year to date, total operations have been around 100 billion active spindle hours. Assuming the same relationship to cloth yardage as prevailed last year, it is calculated that production has already exceeded 9,300,000,000 square yards of all types of woven cloth.

Cotton consumption for the nine months exceeds 8,500,000 bales and should approach a total of 11,400,000 for the entire calendar year.



A FLYING BOAT PLANT in the SOUTH

A PLANT in which giant air cargo flying boats will be assembled is now being constructed for the Nash-Kelvinator Corporation at New Orleans. This not only marks another manufacturing industry but is especially important because of the announced anticipation of this company to continue making airplanes at this location when the war is over. Plants for the manufacture of war goods are vitally important but those permanently established in the South will be particularly welcomed for the part they will play in the development of this region's economy.

Until a few months before war came, Nash-Kelvinator was a thriving manufacturer of automobiles and household appliances, but today it finds itself, like so many other companies engaged in a program calling for its entire output in products for the exclusive use of our armed forces, demonstrating the rapid adaptability of this country's industry to the manufacture of war materials.

Many months ago, and while their own plants were in the process of being converted, Nash-Kelvinator's engineers and supervisory personnel went to the motor, plane and propeller plants of United Aircraft Corporation in the East to become thoroughly familiar with their production methods. Today the company has contracts for the manufacture of the principal products of United.

In addition to acquiring firsthand knowledge of the problems ahead, these visits also served to

reduce the amount of time it would otherwise have taken to train the employees in the new manufacturing technique and enabled the company to get a quicker start.

The first contract awarded to this company in the aircraft field came when the U. S. Flying Forces asked the company to build Hamilton Standard hydromatic, variable-pitch propellers, a United product. The Defense Plant Corporation of R. F. C. selected a long unused automobile plant in a midwestern city and assigned Nash-Kelvinator the task of rehabilitating it as rapidly as possible for the manufacture of the propellers.

To the layman, a variable-pitch propeller may appear to be simple enough to manufacture, but to the aircraft world it is one of the most difficult, for no part of the entire plane, including the engine, requires more exacting standards or greater skill. The hydraulic mechanism which controls the pitch of the blades, and the balance between the blades and the entire propeller assembly, demand a degree of precision which might stump a fine watch maker.

Moreover, before the war mass production of propellers was held to be impracticable. But Nash-Kelvinator's assignment was to adapt

mass production methods to the problem, design the plant accordingly, equip it, and train workers to man the lines. In January, only seven months after the dust was swept from the old building, the plant was producing propellers. Production has been stepped up every month since then.

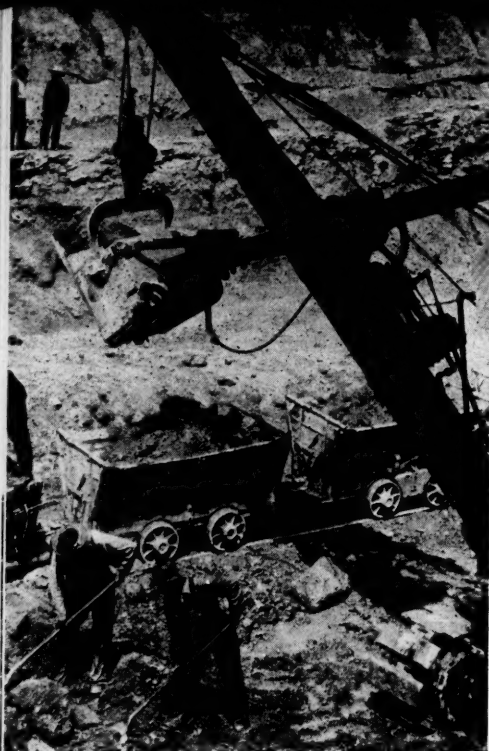
This job resulted in a second and larger propeller contract, and another and larger building in the same midwestern city has been re-designed and now awaits only the necessary machinery in order to get into production.

In the meantime, one of the engineering organizations controlled by Nash-Kelvinator was given the assignment of converting its peacetime production of electrical controls to the making of intricate parts for the automatic plant pilot used in bombing planes, and to offer general engineering help to the Army Air Forces. This program has been underway for some time.

Next came a contract to make another United Aircraft product, Pratt & Whitney aircooled motors. One of Nash-Kelvinator's former automobile manufacturing plants rapidly is being readied for the work of building Pratt & Whitney motors in their entirety. These are the most powerful plane motors known to be in production today, and probably will be used to power such pursuit ships and fighters as the Navy's new "Corsair" and the Army's "Thunderbolt," war planes which are said to have no equal in

(Continued on page 62)

Above—The giant Vought-Sikorsky flying boat which Nash-Kelvinator will soon start producing on a mass production basis.



Mining bauxite, the ore of aluminum, by open-pit methods.

WITH the completion of an alumina works and an aluminum producing works in the state of Arkansas, that state now occupies the unique position of being the only state in the United States in which all three processes for the production of aluminum—mining, ore purification, and reduction—are carried out.

Bauxite, the ore of aluminum, has been mined in Arkansas for many years by a number of mining concerns. The alumina works and aluminum works recently placed in operation in Arkansas were engineered and built by the Aluminum Company of America for the Defense Plant Corporation. The Aluminum Company is also operating these works.

Briefly, the cycle of operation carried out in Arkansas follows:

Mining: Bauxite is found in beds and pod-like masses, the principal deposits in the state being in Saline County. For use in the manufacture of aluminum, the ore usually contains about 55 per cent aluminum oxide and less than 7 per cent silica. Under present conditions and as a result of the saving of transportation charges, it is possible to use within the state of Arkansas ores which contain

lower aluminum oxide content and higher silicon oxide content.

The deposits are located by outcrops or exposed surfaces and by drilling test holes. If the bauxite occurs near enough to the surface to make it economical to remove the overburden, the ore is mined by open-pit methods; otherwise, underground methods of mining are employed.

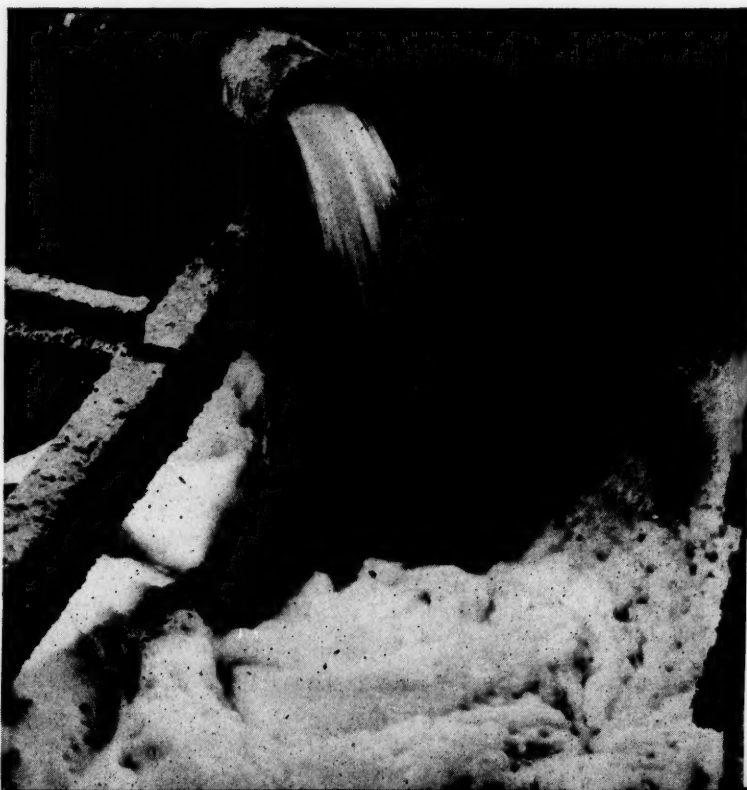
As the bauxite comes from the mines, it is a mixture of lumps and fines. In it there is a considerable amount of clay in which is present a high percentage of silicon oxide, or silica. The large lumps must be broken and because silica is an undesirable impurity, the clay must be separated from the bauxite.

Aluminum Production in Arkansas

The ore from the mines is hauled to a nearby mill for this initial processing.

At the mill the ore is dumped into powerful crushers which break the large lumps. Bucket conveyors and belts carry the bauxite from this first crushing operation to large screens where the ore is sprayed with water. The over-size pieces of bauxite which do not pass through the screens are fed into secondary crushers to be broken into smaller pieces. Finally, the lumps of bauxite, if still mixed with clay, are conveyed to a classifier in which they are washed and rewashed in order to insure the removal of as much clay as possible. As the ore is discharged

A step in the wet chemical process for the purification of bauxite. Pumping the sodium aluminate solution into precipitating tanks.



from the classifier, most of the water is drained off, while a dewatering screen over which the ore passes on its way to ore bins permits further drainage. From the ore bins, the bauxite is fed into drying kilns to drive off the moisture. The ore is now ready for shipment to the alumina works to be converted into aluminum oxide.

Ore Purification: The ore from the mines on entering the alumina works is further reduced in size in crushers and hammer mills. Finally it is ground into a powdery mass with a hot solution of sodium hydroxide and pumped into large pressure tanks or digesters. In these digesters the caustic soda dissolves the aluminum hydroxide out of the bauxite to form a sodium aluminate solution. The impurities in the ore, not affected by the caustic, remain in solid form and are removed from the sodium aluminate solution when it is pumped from the digesters into filter presses. The solution being liquid passes through the filter while the impurities remain behind as a red mud residue.

After passing through the filter presses the sodium aluminate solution is pumped into precipitating or settling tanks as high as a five- or six-story building. As the solution slowly cools in these tanks fine crystals of aluminum hydroxide begin to settle out of the solution. The aluminum hydroxide is transferred from the precipitating tanks to other tanks in which it is washed to remove the caustic. The caustic soda solution, after being reacidified, is pumped back into the digesters to treat a new batch of bauxite, while the aluminum hydroxide, which is nothing more than aluminum oxide chemically combined with water, is heated white hot in large rotating kilns to drive off the chemically combined water and change the character of the material so that it will not reabsorb moisture from the air.

In the production of one pound of aluminum oxide, or alumina, two pounds of bauxite is required. The powdery white chemical is now ready to be reduced to aluminum.

Reduction: The reduction works in which the alumina is reduced to metallic aluminum consists of

long rows of electrolytic cells. The electrolytic cell in which the metal is made is rectangular in shape and is made up of a steel shell lined with carbon. The carbon lining of the cell serves as the cathode while the current is led into the cell through carbon anodes suspended from above the cell on an overhead busbar.

The successful operation of the electrolytic cell is based on the fact that alumina when dissolved in molten cryolite can be decomposed by the passage of an electric current. Cryolite is found commercially only in faraway Greenland. It is quite possible, however, to make a synthetic material which is the chemical equivalent of natural cryolite, and in the Arkansas works, both synthetic and natural cryolite are employed.

In the operation of an electrolytic cell, the cryolite bath mate-

rial is first introduced into the cell. When it has been fused by the electric current, the alumina is added, and as the current is passed, the alumina which has been dissolved in the cryolite, is separated into aluminum and oxygen. The oxygen liberated at the anodes combines with the carbon and escapes through the crust of the bath. The aluminum is deposited into the bottom of the cell where it remains as a molten layer and from which it is removed and cast into pigs.

The process is continuous. When the alumina content in the bath decreases as a result of electrolysis, more alumina is added and the cycle of operation is repeated.

In the production of one pound of aluminum, two pounds of alumina is consumed. In addition, ten kilowatt hours of electricity is

(Continued on page 56)



Pouring aluminum pigs.

WARTIME PRODUCTION of CIVILIAN GOODS in ENGLAND

IN every phase of Britain's economic life today, plans are made to consolidate as closely as possible the expenditure of time, effort and material on the production of civilian goods so as to leave the maximum possible for war supplies. The nomination of 2,000 clothing firms out of 25,000 in the industry to undertake the production of "utility" and Government clothing is a striking example.

Another example is the plan of the Board of Trade for the consolidation of the soft drinks industry. Under this plan production of the whole industry is to be given over to a small number of firms. All brands are to disappear for the duration of the war. The output of these nucleus firms is to be carefully planned. Carbonated drinks are to be decreased in volume, but essences and syrups easier to transport are to be increased. Deliveries are to be organized so that each factory will deliver only in a prescribed area.

Even more sweeping is the plan mentioned for the Clothing industry. Out of about 25,000 firms engaged in making up clothing, about 2,000 (mainly the large mass producing firms) have been "designated" to produce all the "utility" clothing. With the cloth manufacturers allowed to produce very little but "utility" cloth, and with the consumer spending his coupons almost entirely on "utility" clothes, the pattern for this industry is thus complete.

"Utility" products were defined as "goods sufficiently clearly designed for their prices to be fixed, planned to meet essential needs in a sensible manner and produced in the most economical way possible." As a counterpart to the production of utility goods in every suitable industry, the Government is prohibiting the production of any articles which do not fit into this program. In the domestic glass in-

Reduced output and standardized products release workers, materials and plants for war effort

dustry, for example, only tumblers, jugs, mugs and small mirrors will be produced; in the case of jewelry, only clocks, watches, identification bracelets, cuff links, studs, and plain wedding rings. It is estimated that this policy will immediately release 30,000 additional workers for war work, besides increasing the supply of essential requirements.

The wartime policy so far for civilian goods may be seen to fall into three stages. In the first, "Limitation" controls (comparable to the "L" or Limitation Orders of our own W.P.B.'s Priority Division) were put on the total amount of raw materials to be used as well as on the total amount of civilian goods which could be produced. In the second, usually referred to as the "concentration of production" stage, the number of factories producing civilian goods was drastically cut. In the third and what is hoped will be the final stage, stan-

dard fixed-price "utility" goods are produced in such a quantity as has been calculated will satisfy only essential civilian needs.

The concentration plan put forward originally was that in every industry covered by Limitation of Supplies Orders or by controls over raw materials, plants which were not working at full pace, or were needed by the war program, were to cease operation and transfer their quota of production to "nucleus" firms. Nucleus firms were to be given certain privileges; their supply of labor and raw materials for essential production would be assured, and they would receive Government orders. One extremely important factor was that every industry was asked to make its own arrangements voluntarily for the selection of nucleus firms, but the Government undertook to give every firm which was closed through concentration a chance to re-open after the war.

In contrast with the later developments of concentration the Government worked, in its early plans, on the assumption that no unified plan would be necessary for every industry as a whole. Any firm, however small, could apply to be recognized as a nucleus firm provided that it could arrange to absorb enough production to keep it busy. There was no suggestion, at this stage, that standardized articles should be produced. On the contrary the Government hoped that nucleus firms would be able to make specialized articles for the closed firms who would continue to market these articles to their own customers.

The Government offered no compensation to firms to close, the established principle being that the Government does not pay any compensation for war losses except for those due to direct enemy action. Manufacturers accepted the necessity to make any sacrifice needed

for the war effort. What compensation there was for closed firms was provided by the nucleus firms in one of various ways: by manufacturing for the closed firm at cost price, or by buying the closed firm's wartime quota, or by paying a levy towards a compensation fund, or by sharing the profits, or by buying out the closed firm. In every way the Government tried to encourage arrangements which would leave the closed firms intact. At the same time it gave every industry a time limit to produce voluntary plans, in default of which compulsory plans were to be applied by the Government.

Within 14 months, 250,000 workers and 55,000 sq. feet of factory space had been released through concentration. The workers were largely "factory trained" and thus valuable for war production.

Because of the effort, at this stage, to maintain the voluntary character of concentration, the plans adopted varied considerably. In hosiery, for example, small firms continued largely to have their own products made for them by the nucleus firms. In cutlery, the Government had to impose its own plan as the industry did not lend itself to voluntary concentration.

The problem of branded articles was met in various ways. Where they could not be maintained, they were sometimes replaced by a wartime substitute brand, representing a joint production of different firms. Where concentration plans covered the industry as a whole, compensation funds were founded for the care and maintenance of closed factories. In the cotton industry, nucleus firms paid a levy based on spindles left in operation while in the carpet industry the levy was based on the amount of carpets produced.

During this period, concentration was already beginning to take new forms. In production, the new tendencies were for the Government to take a direct part in deciding not only the amount of production but the exact articles which were to be produced, and the firms which were to produce them. Outside of production, concentration was extended to cover the distribution of food, the Civil Service, banks and financial institutions;

and plans were even discussed for the concentration of all the retail trade in goods other than food.

Typical also of the latest developments are the efforts made to extend or simplify existing concentration plans. Some industries, for example, Hosiery, have been re-concentrated. The Paper Box and Carton industry which could not achieve voluntary concentration is now being surveyed for compulsory concentration. The operations of the Brick industry have been considered by a special Government Committee, and a plan formulated

So far, the encroachments of war production and material shortages have been felt comparatively little due to existing stocks on hand. But future war requirements are such that their impingement on civilian goods production poses a serious question. This question looms large on our horizon after less than a year of war.

Other countries have been at war longer than we have been. What has been their experience and how have they met this problem? Here are some of the things that England has done. This article is presented not only as a matter of interest but also with a view to the possibility that England's experience may offer some guide to our own future.—EDITOR.

similar to the plan for the Soft Drinks industry. The diamond-cutting industry has been concentrated, and plans are prepared for Paint and Varnish, Jute, Laundries and other industries. In the Cotton industry on the other hand, it was found that concentration could be carried too far. Some mills were reopened temporarily to cope with essential Government needs, and 10,000 workers were sent back to this industry.

Independently of the Board of Trade, the Ministry of Food has been active in applying concentration wherever possible to the pro-

duction of food. Since 1940, margarine and cooking fats have been manufactured by one combine representing all manufacturers, and producing a standard unbranded article. The slaughtering of cattle and the dressing of meat has been restricted to 800 slaughter houses. Before the war about 16,000 butchers slaughtered their own cattle. Concentration plans have been prepared for bacon curing, butter packing, cheese processing, milk canning, glucose manufacture, provender milling and egg packing.

Striking progress has been made in the concentration or rationalization of food distribution. Wholesale buyers of margarine, fats and flour, have to take it from the nearest factory or mill. In every urban centre, deliveries of milk are to be reorganized so as to prevent any overlapping.

A form of concentration has also been introduced into the packaging of all types of goods. Apart from the controls which have increasingly restricted the use of paper, cartons, and tin in packaging, the latest Packaging Order drastically reduces the number of sizes in which commodities may be packaged, sometimes allowing only one size. Manufacturers in no less than 100 trades had already reduced the numbers of sizes available for their packs, and in many cases have voluntarily adopted standard containers.

The most difficult problem, as yet unsolved, is the possible concentration of retail trade. With the shortage of supplies and labor, traders have been badly hit. The Government appointed a Committee to examine the problem and it reported that "present conditions may almost of necessity involve the withdrawal of a proportion of existing traders." Voluntary concentration has not been achieved to any appreciable extent, and in its latest report the Committee has suggested that it may be necessary to put forward a compulsory plan in which traders who carry on pay a levy for the compensation of those who withdraw for the duration of the war. Naturally a plan of this sweeping character will not be accepted easily, yet some concentration plan will have to be devised for retail trade, to meet war conditions.

CONTAINERS INDUSTRY

MEETS WAR CONDITIONS

CREATION of new types of containers to meet the conditions of war is one of the more important, if little publicized, packaging developments which have taken place in the last year and a half.

The containers industries are highly specialized, and, as a result, have not been able to convert their facilities to the production of a large volume of direct war items. "Conversion" in the containers industries, has meant instead, the invention of new types, and adap-

tations of old types, to meet the peculiar requirements of war.

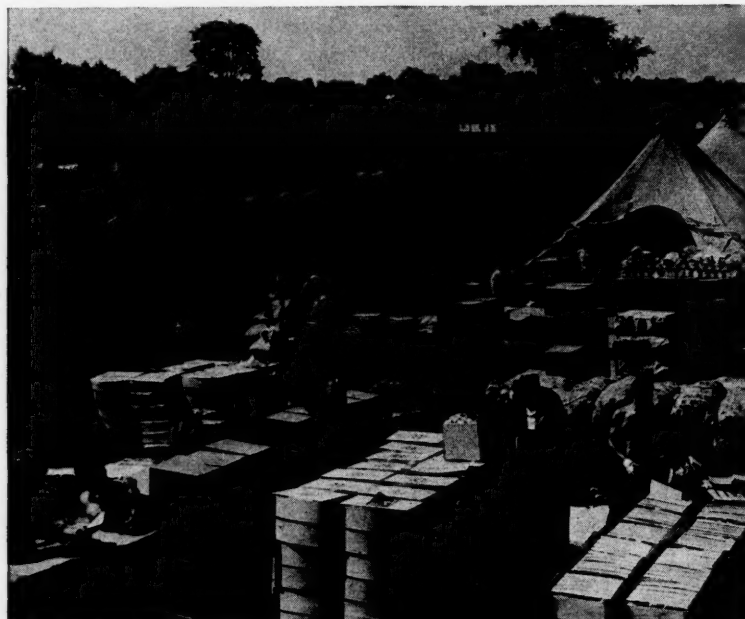
The steel shipping container industry, for instance, has turned out an American version of the "blitz" can—a multi-purpose 5-gallon can which is used by the armed forces for carrying all sorts of liquids. This container can be used for water, oil, or gas, and can be carried by one or two soldiers. Although made of heavy steel, the cans are designed to float even when full.

Fibre can manufacturers have developed a shell container, a spiral wound tube with metal ends, which affords maximum protection to all sizes of shells from the time they are made until they are used. In this connection, it is interesting to note that the American Can Company has developed a new method for making cans with fibre bodies on machines used for the manufacture of metal containers. This new method, which will be made available to the entire industry as soon as it has been thoroughly tried and perfected through actual production, is considered the most important development within the can manufacturing industry within the past decade.

The greatest merit, perhaps, of the new method, is that no new machinery is required. At a time when it is impossible to get new machinery or tools and materials with which to construct it, this method has been devised of feeding fibre sheets into existing machines geared for manufacturing metal cans and obtaining a reasonable facsimile of the old container. Another factor of merit of this new development is that the manufacturer of a product which uses the cans, also may use his existing packaging machinery. This is highly important, as the product-manufacturer is faced with the same conditions as confront the can manufacturer in the matter of priorities. He would be unable to procure the new machinery necessitated by new packing methods which would be forced on him by substitute containers.

A part of the variety of containers needed by the armed forces may be seen in these pictures. At the top food supplies are being unloaded at an Army camp. Below, a sergeant selects samples of foods that have been submitted by manufacturers. In the research laboratory where these are examined, much consideration will also be given to the ability of the containers to withstand the rigors of various climatic and other conditions.

(Photos by U.S.D.A. and U. S. Army Signal Corps)





The new method will come to the rescue of those products known in the trade as "dry" such as drugs, cosmetics, spices, powders, etc. A few liquid products, other than processed food, may also be affected. Many manufacturers of these products, confronted with the problem of finding a container as satisfactory as the familiar tin can and one that would retain the distribution and merchandising values already associated with this container, have faced a considerable loss of business.

Under the method the Company developed, paper will be run through the various tin can lines. The fibre, cut to sheets of tin plate size, lithographed on the regular presses formerly used for lithographing designs on tin plate, will then be sheared and formed into bodies. The ends will be seamed on to the container with the regular seaming machine now in use.

Another new type of container is a heavy paper-board carton which has been designed for overseas shipments. Not long ago, it was thought impossible to ship commodities abroad in anything less than wood or wire-bound boxes.

Other kinds of "war-use" containers—not necessarily new types—cover a varied range. Canisters for gas masks, cartridge containers, ammunition boxes, wire spools, battery cases, filter boxes for the air corps, powder cans, mine fuse containers, emergency ration tins, and a host of other military containers supplement the actual tools of war.

The diversity of the products which are needed by the armed forces indicates that there are few

containers which do not have some degree of essentiality.

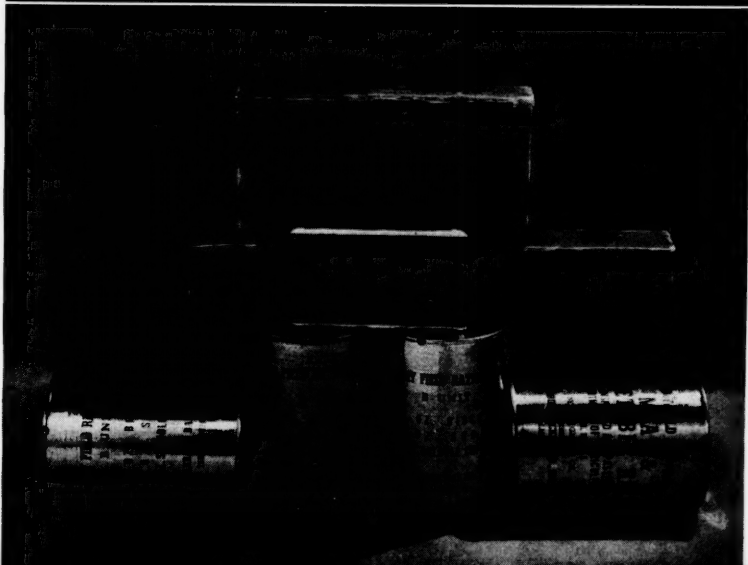
Containers are necessary to help maintain not only the man behind the gun but the man on the production front as well. Tin cans, for instance, are being used to pack fruits and vegetables going to the Army, to civilians, and to Lend-Lease; containers are being produced to hold evaporated milk and other essential subsistence items; ration cans for distribution to soldiers are being produced by the million; for each anti-aircraft or other shell requiring a fuse or motor, one hermetic seal must be produced; containers must be provided for the vital blood plasma for the Army and the Red Cross.

Jars and bottles, replacing metal cans for distribution in civilian channels, and for the Army

(Continued on page 65)

Above—a few of the many types of fibre-bodied containers being manufactured on can-making equipment by means of a new method of fabrication fibre board in the same manner as tinplate. Below—examples of the wide variety of containers used in the Army. Such containers must necessarily meet rigid specifications to insure the safety of their contents regardless as to where they are to be sent.

(Photos by U. S. Army Signal Corps)



South's Construction Awards Gain

*September
contracts
above level
for August*

*nine month
figure at
record peak*

South's Construction by Types

	September, 1942 Contracts Awarded	September, 1942 Contracts to be Awarded	Contracts Awarded First Nine Months 1942	Contracts Awarded First Nine Months 1941
PRIVATE BUILDING				
Assembly (Churches, Theatres, Auditoriums, Fraternal)	\$143,000	\$455,000	\$4,069,000	\$15,213,000
Commercial (Stores, Restaurants, Filling Stations, Garages)	329,000	247,000	4,629,000	22,874,000
Residential (Apartments, Hotels, Dwellings)	5,483,000	310,000	98,065,000	76,161,000
Office	71,000	.....	1,118,000	11,853,000
	\$6,026,000	\$1,012,000	\$107,881,000	\$126,101,000
INDUSTRIAL				
PUBLIC BUILDING				
City, County, State, Federal	\$198,136,000	\$104,410,000	\$1,499,647,000	\$729,468,000
Housing	14,220,000	12,400,000	181,260,000	118,600,000
Schools	3,165,000	5,414,000	30,167,000	27,994,000
	\$215,521,000	\$122,224,000	\$1,721,074,000	\$876,011,000
ENGINEERING				
Dams, Drainage, Earthwork, Airports	\$14,445,000	\$7,457,000	\$292,618,000	\$106,766,000
Federal, County, Municipal Electric	1,010,000	82,000	13,997,000	54,132,000
Sewers and Waterworks	5,908,000	4,403,000	56,011,000	16,462,000
	\$21,363,000	\$11,942,000	\$362,626,000	\$177,360,000
ROADS, STREETS AND BRIDGES				
	\$17,928,000	\$8,825,000	\$132,824,000	\$127,241,000
TOTAL	\$313,458,000	\$173,130,000	\$3,313,480,000	\$2,264,153,000

SOUTHERN construction took an upward swing in September with a total of contracts for projects of \$313,458,000, showing gains over both the preceding month and September of last year.

In the elapsed nine months of 1942, Southern construction has been more active than during any other period of its history. The total of contracts awarded is now \$3,313,480,000, a figure which outranks all previous totals not only for comparable periods but for any twelve-month calendar year. The \$2,922,808,000 for the entire year of 1941 was then a record. This figure was topped in eight months of 1942. Addition of the ninth month's \$313,458,000 carried the peak to still greater heights.

At this time last year the total of Southern awards was \$2,264,153,000, almost one-third less than the total for the current nine months. Industrial contracts were then at the head of the list. This first position is now occupied by public building, industrial construction rating next in value. Engineering and road and bridge classifications occupied third and fourth places, respectively, in both years. Private building, then as now, was the last on the list. Despite rigid government restrictions that have held back this private work, it is only fourteen per cent under the value level for the first nine months of last year.

September's gain halted a four-month downward trend from the high point of the year. This occurred in April when a \$496,651,000 aggregate for Southern awards established an all-time record for any single month in the history of that section. New activity in industrial, highway and other engineering construction

was mainly responsible for the stabilization in September.

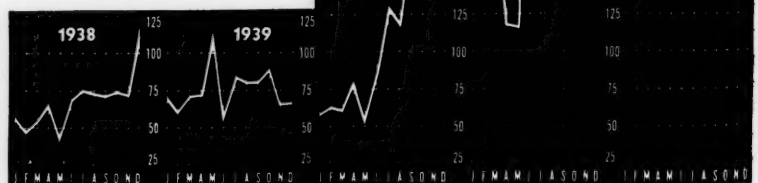
Industrial construction initiated during September was more than double that of the month before. The September total in this field was \$52,620,000; the August total, \$25,131,000.

gust total, \$25,131,000.

Highway projects as announced in reports received by the MANUFACTURERS RECORD were higher in total valuation in September than they have been for three

(Continued on page 56)

A gain in the valuation placed on Southern contracts during September halted a four-month downward trend. The \$313,458,000 total, in addition to being higher than the \$284,694,000 of August, was above the figure for September, 1941. New activity in industrial, highway and other engineering and heavy construction was mainly responsible for the rise. Southern construction awards now total \$3,313,480,000 as compared with the \$2,264,153,000 total for the comparable period of last year. The current nine-month total is not only substantially above that level, but also higher than in any previous twelve-month calendar year.



MANUFACTURERS RECORD FOR

SOUTH'S RESOURCES

ESSENTIAL

TO

VICTORY

BLUE BOOK OF SOUTHERN PROGRESS

Gives the facts of resources and opportunities

1942 issue off the press December 1st

THE SOUTH

Leads the nation in the production of
MINERALS

Bauxite	100%
Sulphur	99%
Ball clay	95%
Carbon black	95%
Phosphate rock	95%
Koalin	90%
Fuller's earth	81%
Natural gas	72%
Natural gasoline	69%
Crude petroleum	59%
Bituminous coal	50%
Mica	50%

AGRICULTURE

Naval stores	100%
Peanuts	100%
Cotton lint	93%
Sweet potatoes	92%
Tobacco	90%
Mohair	87%
Rice	83%

THE SOUTH'S

Manufactures in dollar value are one fifth of the entire United States including the South, and lead in:

Gum naval stores	100%
Cottonseed oil, cake and meal	91%
Cotton yarn	85%
Cigarettes	84%
Bone black, carbon and lamp black	80%
Cotton broad woven goods	76%
Wood naval stores	70%
Fertilizers	70%
Rayon and allied products	70%
Rice cleaning and polishing	70%
Seamless hosiery	69%
Oilfield machinery and tools	57%
Cast iron pipe and fittings	53%
Blended and prepared flour	50%
Work shirts	50%

In the South are 81 plants that are either the largest of their kind in the world or in the United States.

Business and professional men use the *Blue Book of Southern Progress* constantly as a work of reference. Manufacturers, railroads, banks, utilities and service organizations buy copies for their executives.

—ORDER NOW—

To include in first press run.

Before publication prices:

Single copies	50c
50 to 100 copies	45c
500 copies	40c
1,000 copies	30c

AFTER publication price:

\$1.00 each

THE ONLY WORK OF ITS KIND

Facts and figures are necessary to appreciate the opportunities for industrial development and markets of the Southern States.

MANUFACTURERS RECORD

Baltimore, Md.

Please enter my/our order for copies of 1942 BLUE BOOK OF SOUTHERN PROGRESS for which \$..... is enclosed.

NAME

ADDRESS

BUSINESS

Date

This Insert is for
The Convenience of the Thousands
Who Annually Order the
BLUE BOOK OF SOUTHERN PROGRESS
A Coupon is attached.

W
tribu
Emp
south
total

Stat
Alab
Arka
Dist.
Flori
Geor
Kent
Louis
Mary
Miss
Miss
North
Okla
South
Tenne
Texas
Virgin
West

Sou
Uni

*1
of this
000; T
"A
chutes
struct
(when

W
Of

E. MORR

OCTO

War Contracts and Allocations to Southern States

Increase \$969,153,000 During July

War contracts and allocations distributed by Federal agencies and British Empire purchasing missions to the southern states through July 31, 1942, totaled \$15,122,332,000 compared with

\$14,153,179,000 at the end of June, 1942. This represents a gain of \$969,153,000 during July. The period covered is that since June 1, 1940, except for the British contracts which date from September,

1939. No contracts under \$50,000 are included nor are purchases of foodstuffs included. Totals by states and by government agency for the entire period are shown in the accompanying table.

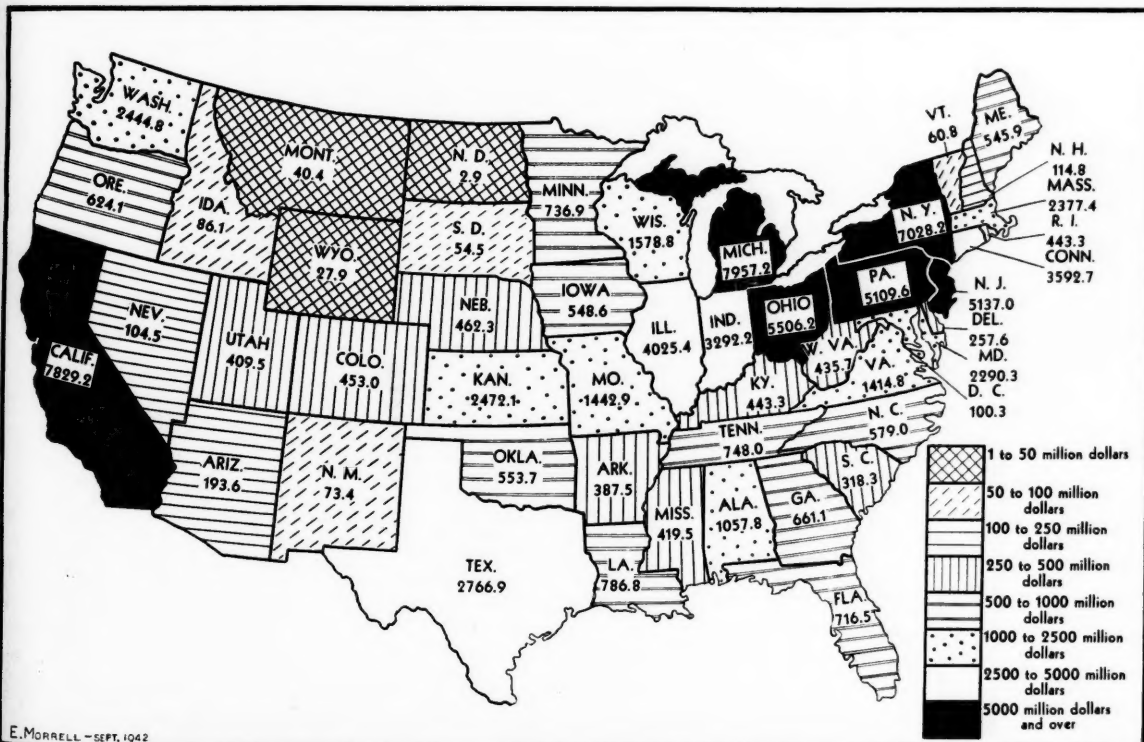
Major War Supply and Facility Contracts and Allocations, June, 1940, Through July, 1942
(Thousands of dollars)

State	Army, Navy and Maritime Commission					Dept. of Commerce		Federal Works	Federal Security	Federal Loan	Total
	Aircraft	Ships	Miscell.	Industrial	Non-Industrial	C.A.A.	National Housing Agency	Agency	Agency	Agency	
Alabama	.....	268,871	247,121	358,127	133,748	1,270	17,420	18,729	6,234	5,985	1,057,807
Arkansas	.....	.....	50,665	219,042	106,280	356	2,622	4,281	3,613	532	387,458
Dist. of Col.	.....	324	4,661	14,635	36,981	.....	28,868	13,381	1,285	157	100,292
Florida	950	225,714	32,508	35,027	361,422	6,893	12,270	31,131	5,292	5,316	716,523
Georgia	.....	132,258	191,733	89,221	212,674	4,792	8,065	13,836	6,469	1,994	661,062
Kentucky	.....	.....	70,633	171,554	136,268	1,046	6,268	11,560	5,357	40,646	443,332
Louisiana	68,496	119,035	56,568	269,669	198,454	4,613	5,004	17,264	4,731	42,919	786,805
Maryland	996,104	403,335	475,690	184,617	146,440	.....	40,670	15,164	3,706	16,009	2,290,314
Mississippi	180	123,983	53,145	57,119	163,868	1,430	1,741	12,216	5,280	327	419,502
Missouri	157,893	1,660	597,227	498,828	135,499	310	9,093	30,966	5,687	5,705	1,442,868
North Carolina	19,667	95,042	148,576	37,024	244,121	587	9,326	18,248	5,697	527	579,019
Oklahoma	160,776	.....	51,104	185,301	139,148	769	1,855	8,778	5,530	449	553,710
South Carolina	.....	10,800	106,700	37,858	117,476	2,927	11,737	27,264	3,401	140	318,303
Tennessee	47,613	14,080	234,828	267,201	161,594	689	5,134	9,704	5,679	1,367	747,954
Texas	634,700	259,585	274,027	824,253	679,462	7,412	20,213	47,671	13,778	5,626	2,766,885
Virginia	.....	564,475	82,588	207,693	439,595	112	77,096	33,838	5,144	1,833	1,414,756
West Virginia	.....	30,048	118,488	259,341	1,452	.....	2,020	18,528	5,708	157	435,742
South	2,086,379	2,249,160	2,796,262	3,716,510	3,414,482	33,206	259,422	332,559	92,591	129,689	15,122,332*
United States	23,067,668	9,070,814	31,068,173	14,068,073	8,514,371	70,813	652,141	860,419	299,829	1,029,794	88,722,129*

*Includes \$30,034,000 for the United States under the Farm Security Administration of the U. S. Dept. of Agriculture for defense housing; of this, \$12,072,000 was for the South—Ala., \$302,000; Ark., \$67,000; La., \$52,000; Md., \$8,579,000; Miss., \$213,000; N. C., \$204,000; Tenn., \$115,000; Tex., \$158,000; and Va., \$2,382,000.

"Aircraft" includes contracts for airframes; airplane engines, propellers, and other parts; and certain related equipment such as parachutes and aircraft pontoons, armament, instruments, and communication equipment are excluded. "Ships" include contracts for the construction of new vessels of all kinds; the purchase of used ships; and ship conversion, recommissioning, and repair. Propulsion machinery (when separately contracted for), armor, armament, navigation and radio equipment, parts, and materials are excluded.

War contracts and allocations of all Federal agencies and British Empire purchasing missions through July was \$88,722,129,000. Of this, \$15,122,332,000 has gone to southern states. Totals for each state in millions of dollars are shown in the map below.



Important New Industrial Plants and Expansions in the South During September

ALABAMA

Plant—C. G. Kershaw Contracting Co., 2212 20th Ave., S., Birmingham, Walter Butler Co., St. Paul, Minn. and Engineers, Ltd., San Francisco, Calif., have contract for expansion of a manufacturing plant in Alabama at cost in excess of \$5,000,000; work under supervision of U. S. Engineer Office, Atlanta, Ga.

BIRMINGHAM—addition—George A. Fuller Co., Munsey Bldg., Washington, D. C., has contract for alteration and addition to plant for Linde Air Products Co.; brick and concrete.

BIRMINGHAM—detinning plant—Johnson & Jennings, Cleveland, Ohio, will operate detinning plant to be erected by H. K. Ferguson Co., The Hanna Bldg., Cleveland, Ohio; financed by Reconstruction Finance Corp.; estimated cost \$1,000,000.

UNIONTOWN—mill building—Columbia Manufacturing Co., Selma, opened bids Sept. 14 for mill building addition; Robert & Co., Archts.-Engrs., Bona Allen Building, Atlanta, Ga.

ARKANSAS

Manufacturing plant—Sanderson & Porter, 52 William St., New York City has contract for architectural and engineering services and construction work for manufacturing plant in Arkansas; U. S. Engineer Office, Little Rock, in charge of work; in excess of \$5,000,000.

POCAHONTAS—plant—J. N. Pratt, has contract for brick and concrete building for Chester B. Franz Produce Co. to be used for chicken dressing plant.

FLORIDA

Pipeline—Anderson Brothers, 113 N. Norfolk St., Tulsa, Okla., have contract for 200 mile, 8-in. pipeline across Northern Florida for Trans-Florida Pipe Line Corp., T. L. Wynne, First National Bank Bldg., Dallas, Tex.; will be constructed entirely of used pipe.

Repair shop—Johnson & Mann, Walgreen Bldg., St. Petersburg, has contract for motor repair shop for U. S. Engineer Office, P. O. Box, 4970, Jacksonville; less than \$100,000; location Highlands County.

GEORGIA

ATLANTA—addition—Jiroud Jones Construction Co., Walton Bldg., has contract for addition to building, 399 Bishop St., N. W., for Georgia Lead Co.; 3-stories; concrete found.; brick walls; composite roof.

ATLANTA—wiring, etc.—Cleveland Electric Co., 557 Marietta St., N. W., has contract for temporary lighting system for Marietta Aircraft Assembly Plant for U. S. Engineer Office; cost \$50,000; A. Farnell Blair, Decatur, Ga., has contract for final assembly and clean-up building \$500,000 to \$1,000,000; Kirby-Saunders, Inc., 901 Volunteer Bldg., has contract for heating and ventilating in main assembly building; Grinnell Co., Inc., 240 N. Highland Ave., N. E., Atlanta, has contract at less than \$500,000 for distribution system (outside steam and compressed air distribution system and steam piping system); Broadway Maintenance Corp., First National Bank Bldg., contract at less than \$100,000 for electric distribution system; Robert & Co., Engrs., Bona Allen Bldg.

BRUNSWICK—addition—Daniel Construction Co., Brunswick and Greenville, S. C., has contract for addition to building for National Cylinder Gas Co.

LOUISIANA

Expansion—War Department announced contract and authorization for construction and expansion of a manufacturing plant in Louisiana to Commercial Solvents Corp., 17 E. 42nd St., New York; under supervision

Contracts Awarded

of Vicksburg, Miss. Engineer Office; cost above \$5,000,000.

NEW ORLEANS—building—George A. Fuller Co., 1138 Munsey Bldg., Washington, D. C., has contract for building for Linde Air Products Co., at 432 N. Anthony St.; cost \$70,000.

NEW ORLEANS—building—New Orleans Public Service, Inc., let contract to Boh Brothers Construction Co., 2400 Cypress St., for brick powerhouse building with built-up comp. roof at 3012 Cambonne St.; cost \$38,000; plans by Ebasco Service Co., New Orleans.

MARYLAND

BALTIMORE—alteration—Following have sub-contracts for alterations to building, 1501 Bush St. for Truscon Steel Co., 330 W. 24th St.; Morrow Bros., 14 E. Eager St., Gen. Contr.; Peters & Sappington, 2116 Maryland Ave., contract for plumbing; Albert Gunther, Inc., 36 W. Biddle St., for hardware; William F. Zeller Co., Inc., 613 W. Cross St., roofing; Livezey Linoleum Floors, Inc., 909 Cathedral St., asphalt tile; Eli Goldenberg, 602 York Rd., electrical work; C. A. Schmick Co., 719 Cider Alley, painting; League Lumber Co., 721 S. Caroline St., lumber and millwork; Meinschein & Ruth, brickwork.

BALTIMORE—mill building—Pompeian Olive Oil Co., 4201 Philadelphia Ave., erect 1-story brick building; cost \$20,000; owner builds.

FAIRFIELD—buildings—Bethlehem-Fairfield Shipyard, Inc., let contract to Consolidated Engineering Co., 20 E. Franklin St., Baltimore, for clinder block warehouse and clock house; Leimbach & Williams, 30 W. Biddle St., Baltimore, contract for pump house slip and pump house and tank foundation; Cummins Construction Corp., 803 Cathedral St., Baltimore, for utilities building, electrical and maintenance building, two 4-way canteen buildings and to Consolidated Engineering Co., 20 E. Franklin St., Baltimore, for two 4-way canteen buildings; Cummins Construction Corp., 803 Cathedral St., Baltimore, for hospital addition and shop.

FAIRFIELD—addition—W. E. Bickerton Construction Co., 101 W. 22nd St., Baltimore, has contract for 1-story, brick and frame addition to laboratory building for U. S. Industrial Chemical Co.

SPARROWS POINT—oxygen building—United Engineers & Constructors, Inc., 1401 Arch St., Philadelphia, Pa., has contract for oxygen building for Defense Plant Corp., Air Reduction Sales Co., Lessee, 60 E. 42nd St., New York; 1-story; frame; 65x135 ft.

MISSOURI

ST. LOUIS—addition—Moeller Construction Co., 3007 Wyoming, has contract for addition to building, Grand & Chouteau, for Pevely Dairy Co.; L. Haeger, Archt., 3844 Utah St.; 1-story; 36x110 ft.; concrete found.; location 3646 Chouteau; cost \$15,000.

NORTH CAROLINA

WINSTON-SALEM—plant—Allied Aviation Corp., William Schaefer, production manager, let contract to Sam Beck, 200 S. Main St. for heating and plumbing in recently acquired building, Trade St., for glider assembly plant.

TENNESSEE

Air conditioning—T. L. Herbert & Sons, 174 Third Ave., N., Nashville, has contract for air conditioning activated carbon plant to be operated by National Carbon Co.; O. E. Walsh, Federal Bldg., Nashville, owner; Gillmore Carmichael Olson Co., 1873 E. 55th St., Cleveland, Ohio, Gen. Contr.; cost \$3,500,000.

KNOXVILLE—plant—Rohm and Haas, 222 W. Washington Square, Philadelphia, Pa., has permit for rehabilitating old plant of Sterling Wood Products Co., Dale Ave.; expend \$100,000.

TEXAS

EDINBURG—dehydrating plant—Miller Brothers Foods Co., McAllen and San Juan, establish dehydrating plant in old Hidalgo Co. Citrus Assn. plant at San Carlos east of Edinburg; Louis H. Bartlett, has contract for construction and installation of equipment.

FREEPORT—ammonia unit—Dow Chemical Co., Midland, Mich., awarded contract for synthetic ammonia plant near its magnesium plant at Chute near Freeport; cost \$11,000,000; use natural gas as raw material.

GALVESTON—ship yard addition—Texas Gulf Construction Co., 2008 S. Wayside Drive, Houston, has contract for electric shop, pattern shop, compressor house, store room, etc., for Todd Drydock, Inc., Pelican Spit; F. R. Harris Co., Electric Bldg., Houston, Archt.

HARLINGEN—addition—Harlingen Canning Co., Milton B. Clapp, Sec., erect addition to canning plant; 1-story; 40x66 ft.; brick and structural clay tile; concrete floor slab; built-up roof; owner builds.

SOUTH

Defense Plant Corporation, upon recommendation of Office of Petroleum Co-ordinator, has agreed to finance construction of an 8-in. pipeline from Greensboro, N. C. to a point near Richmond, Va., distance of approximately 175 miles; line will be built of second hand pipe; in connection with a privately owned feeder line now under construction from Houston-Beaumont area will provide a through pipe line movement to the east coast; Plantation Pipe Line Co., Healey Bldg., Atlanta, Ga., will construct the line at cost of approximately \$3,600,000; will have capacity of 30,000 bbls. of gasoline daily; probably in operation in 4 months; company now has a line from Baton Rouge to Greensboro with daily capacity of 60,000 bbls., to be increased 30,000 bbls. daily by installation of additional pumping stations along the line. Following contracts let for stations: Jiroud Jones Construction Co., Walton Bldg., Atlanta, for residences and pumping stations at Austell and Winder, both Georgia and Hartwell, S. C.; Christian & Bell, 101 Marietta St., N. W., Atlanta, for pumping stations at Boyd, Ala., Coaling, Lynch and Heflin, Ala.; C. F. Bennett, Kings Mountain, N. C., pumping station at Simpsonville, Blacksburg, S. C., and Huntersville, N. C.; Foundation Company of Mississippi, pumping stations at Fluker, La. and Hawthorne and Paulding, Miss.; White Electric Construction Co., 634 Antone, N. W., Atlanta, awarded contract for electrical work on all projects.

H. C. Price Co., Bartlettville, Okla., has contract for mechanical work on pipe line stations, Fluker, La., Boyd, Coaling, Vincent and Heflin, Ala., for Plantation Pipe Lines, Healey Bldg., Atlanta, Ga.; Williams Brother Corp., Tulsa, Okla., contract for mechanical work in Austell, Winder and Hartwell, Ga. and stations in Mississippi, North and South Carolina.

Contracts Proposed

ALABAMA

BIRMINGHAM—expansion—Birmingham Gas Co., Charles B. Gamble, Pres., has approval of War Production Board for an expansion program to add approximately 11,500,000 cu. ft. daily to its capacity; program contingent upon ability to obtain materials; involve expenditure of \$200,000; a

plant for purification of gas, compressors to move gas into lines and 2 miles of 14-in. cast iron pipe will be required; plan calls for obtaining a supply of gas from Woodward Iron Co., approximating 4,500,000 cu. ft. daily.

BIRMINGHAM — furnace — Tennessee Coal, Iron & Railroad Co., will reline No. 1 furnace at Ensley works.

MOULTON — mill — Grayson Lumber Co., 715 N. 39th St., Birmingham, Ala., plans building new sawmill and establishing village in park near the Cheatham paved highway; tract of land contains 119,000 acres; recently purchased 120,000,000 ft. of timber in William B. Bankhead National Forest; company will operate store and build houses for employees.

ARKANSAS

ELDORADO — pipeline — Root Petroleum Co., constructing 4-in. line to connect at Urbana, 8 miles west of New London with company's line facilities at El Dorado.

Pipe line—President signed order providing for acquisition of land through exercise of eminent domain for pipe line to extend about 150 mi. from vicinity of El Dorado, Ark., to point on Mississippi River near Helena, Ark.; line will be constructed by Project Five Pipe Line Corp. for national defense.

FLORIDA

Pipe line—Trans-Florida Pipeline Corp., T. L. Wynne, First National Bank Bldg., Dallas, Texas, received bids Sept. 15 for construction of government owned Carrabelle to Jacksonville oil pipeline across Florida; work scheduled to start about October 1; 185 miles will be constructed entirely of second-hand pipe, now being dismantled in Texas for shipment to Florida; 3 storage tanks with capacity totaling 172,500 bbls. have been dismantled as have required pumping facilities; some 170 miles of right-of-way have been surveyed.

GEORGIA

Plant—International Minerals & Chemical Corp., former International Agricultural Corp., 61 Broadway, New York, erect plant in Georgia for production of magnesium sulphate used in textiles.

ATLANTA—flooring, etc.—U. S. Area Engineer Office, Marietta, received bids Sept. 24 for wood block flooring for Marietta Aircraft Assembly Plant; received bids Sept. 30 for interior finish in main assembly building; Robert & Co., Archts.-Engrs., Bona Allen Bldg., Atlanta and Marietta; following prospective estimators: MacDougall Construction Co., Hemphill Ave., N. W.; Mion Construction Co., 377 Techwood Drive, N. W.; Hardin & Ramsey, 161 Spring St., N. W.; all Atlanta.

KENTUCKY

CATLETTSBURG — refinery — Ashland Oil & Refining Co., Paul C. Blayer, Pres., erect refinery.

LOUISVILLE — food products — Huter-Quest Co., Inc., J. C. Huter, establish plant at Ninth and Main Sts.

LOUISVILLE — butadiene plant — Carbide & Carbon Chemicals Corp., New York, will operate butadiene plant to be erected by Defense Plant Corp.; cost \$30,000,000; Ford, Bacon & Davis, Archts.-Engrs., New York and at present, Brown Hotel, Louisville.

PARIS — nut plant — K-W Co., Incorporated by Maurice C. Walters and others, to operate plant to handle black walnuts; have leased space in Power Bldg., E. Fourth St.; will handle 1,000,000 lbs. of nuts annually; company is affiliated with Princess Pecan, Inc., Camilla, Ga.; after being processed the nuts will be shipped to Camilla, to be converted into activated charcoal for use in gas masks.

LOUISIANA

Gas plant—Big West Drilling Co., Grady Vaughn, Dallas National Bank Bldg., Dallas, Tex., considering construction of natural gas absorption plant in North Lisbon area of Claiborne Parish; plant would strip wet gas produced in the field, dry gas

would be sent to El Dorado, Ark., through a 10-in. line to be built by Arkansas-Louisiana Gas Co.

Pipe line—Federal Power Commission held hearing Sept. 14 on application by United Gas Pipe Line Co., Shreveport, for certificate of public convenience and necessity authorizing construction of natural gas pipe line extension to company's existing facilities in Louisiana; construct 5½ miles of 8½-in. pipe line from LaFourche gas fields in Louisiana to connect with line owned by the United company which extends from Gibson Field to Lirette-Mobile line; total cost \$127,000.

JENNINGS—boat ways—G. B. Zigler Co., applied to War Department for permission to dredge slip south of Mermentau bridge to provide ways for ship repair and construction and boat ways, 220 ft. long and 13 ft. wide.

LEONS — pipe line extension—San Francisco Planting & Manufacturing Co., Ltd., applied to U. S. Engineer Office, New Orleans, for authority to install an extension to existing 8-in. suction pipe to be supported on timber pile bents, in St. John the Baptist Parish.

NEW ORLEANS — warehouse — J. Gordon Lee, Carondelet Bldg., low bidder for warehouse for River Terminals Corp.; Moise H. Goldstein & Associates, Archts., American Bank Bldg.

Natural gas line—Hope Natural Gas Co. of West Virginia, L. L. Tonkin, Pres., 445 W. Main St., Clarksburg, plans construction of a \$12,000,000 pipe line stretching 1000 miles into Louisiana and Texas which would connect the Hope system in West Virginia at Kentucky border; use 20-in. steel pipe; carry approximately 285,000,000 cu. ft. of natural gas daily into West Virginia for distribution into the steel districts of northeastern Ohio, northern West Virginia and Western Pennsylvania.

MARYLAND

BALTIMORE — alterations — Crown Cork & Seal Co., Highlandtown, receive bids Oct. 1 for alteration to building; Lucius R. White, Jr., archt., 10 W. Chase St.; following are prospective estimators: Morrow Bros., Inc., 14 E. Fager St.; Consolidated Engineering Co., 20 E. Franklin St.; Cummins Construction Corp., 803 Cathedral St.; Franz Construction Co., 10 W. Chase St.; William J. Wiesand, 216 E. Lexington St.

FAIRFIELD—drafting and engineering building — Bethlehem-Fairfield Shipyards, Inc., has plans in progress for drafting and engineering building; 2-story; frame.

MISSISSIPPI

GULFPORT — plant — Kremer Motor Co., establish plant to assemble marine engines; steel and concrete.

PASCAGOULA — warehouse — Ingalls Shipbuilding Corp., received low bid at \$110,000 from Brice Building Co., Inc., 215 S. 15th St., Birmingham, Ala., for 2 warehouses.

MISSOURI

ST. LOUIS — addition — Century Electric Co., 1806 Pine St., having plans prepared by L. Baylor Pendleton and William Iftner, Inc., Asso. Archts., 408 Board of Education Bldg. for addition to factory, 18th and 19th Sts.

NORTH CAROLINA

TRYON — laboratory — Harry Placsek, of Sheets Elevator Co., 6529 Broadway, Cleveland, Ohio, acquired tract of land near Skyuka Mountain for erection of laboratory and dwelling.

WINSTON-SALEM — gliders — Allied Aviation Corp., Maryland Ave. and Maine, Baltimore, Md., J. S. Allsop, production manager, leased Planters Warehouse for assembly plant for manufacture of molded plywood gliders; sub-contracts for manufacture of parts let to Lane Co., Inc., Alta Vista, Va., Morganton Furniture Co., Morganton, N. C., and Unique Furniture Makers, Inc., Winston-Salem.

OKLAHOMA

Pipeline — Tide Water Associated Oil

Co., Ramsey Tower, Deep Rock Oil Corp., 814 S. Harvey St., Magnolia Petroleum Co., Magnolia Bldg., all Oklahoma City and Cushing Gasoline Refining Co., reported, cooperating in construction of an 8-in., 60 mile gasoline pipeline from Drumright-Cushing area to Barnsdall, where it will tap the Great Lakes Pipe Line Co.'s artery from Ponca City - Barnsdall - Kansas City - St. Louis-Omaha, Des Moines, Minneapolis.

TENNESSEE

MEMPHIS — line — Memphis Light, Gas & Water Co., has Presidential approval for Federal funds for transmission line and distribution facilities; cost \$185,170; 5 miles of wood pole transmission line, substation at Millington and 4 miles of feeder line; allocation of \$87,646 FWA funds available.

MEMPHIS — synthetic rubber plant — Defense Plant Corp. will construct for Rubber Reserve Corp. a synthetic rubber plant at cost of \$2,831,000 to be operated by Q. O. Chemical Co., a subsidiary of Quaker Oats Co., 1526 Ragan St., Memphis; will produce furfural a constituent of butadiene.

TEXAS

Pipe line—Fullerton Co., plans construction of 16 miles of 4½-in. line from Fullerton pool of northwestern Andrews county to connect with trunk line of Magnolia Petroleum Co., near Andrews.

Pipe line — Sinclair Refining Co., Fort Worth, plans immediate construction of 4-in. oil pipe line from Marble Falls oil pool of southeastern Montague county, north Texas, to company's Bowie station on Texas-Oklahoma trunk line.

Pipe line — Sinclair Refining Co., Gulf Bldg., Houston, construct 160 mile of 8-in. used pipe line from point near Robstown to Damon Mound, Brazoria County, to provide new outlet for approximately 20,000 bbls. of oil daily; will tie into company's line from Damon Mound to refinery at Sinc, near Pasadena; rights-of-way now being taken for line between Corpus Christi and Damon Mound.

AUSTIN — plant — Harold Ickes, Petroleum Co-ordinator, approved a pressure maintenance project by East Texas Salt Water Disposal Co., intended to increase ultimate recovery of oil from East Texas field by about 200,000,000 bbls.; project has high priority rating; company plans provide for daily injection of 90,000 bbls. of water through 6 injection wells; construction will start around Jan. 1; cost estimated at \$500,000; ultimately, company's program calls for construction of injection facilities having capacity 4 times that of the first project.

FORT WORTH — plant — American Cyanamid Co., 535 Fifth Ave., New York, has option on 6.2 acres in connection with proposed erection of chemical plant by company's subsidiary to be operated by another subsidiary, American Cyanamid Chemical Co.

HOUSTON — plant — Texas Shipbuilding Co., E. C. Barkley, Second National Bank Bldg., acquired 17.26 acre tract on Green's Bayou, for plant for manufacture small craft.

HOUSTON — shipyard — McCloskey & Co., 1618 W. Thompson St., Philadelphia, Pa., acquired San Jacinto Shipbuilders, Inc.; plans enlarging facilities.

PITTSBURG — dehydration plant—Company being formed with Gilbert Wilson in charge to construct dehydration plant on Mount Pleasant Highway; has 30 acre site; first building, 65x250 ft.; cost \$350,000.

WEST VIRGINIA

HUNTINGTON — addition — Precision Products Co., subsidiary of Adel Precision Products Co., H. Roy Ellinwood, Pres., Burbank, Calif., will double output of airplane parts plant at Washington Ave. and W. 15th St.

SOUTH

Plantation Pipe Line Co., Healey Bldg., Atlanta, Ga., with offices also in Guilford Bldg., Greensboro, N. C., will start work soon on extending oil pipe line from Greensboro to Richmond, Va.; line now
(Continued on page 64)

NEW PRIORITIES

PUT IN EFFECT DURING SEPTEMBER

Agave Fiber—M-84 (Amended) prohibits processing, sale and delivery for cordage except for specified uses: restrictions effective through Dec. 31, 1942. M-84 (as amended) Amend. #2 prohibits use in and imports of wrapping twine after 9-30-42 and reduces sale and delivery percentage to 20% of base period use after 9-30-42.

American Extra Staple Cotton—M-197 (as amended) restricts sale, delivery and use subject to specific exceptions; restricts manufacture of stitching thread; and provides for grading and reports: use form PD-597.

Armored Cable—L-165 prohibits acquisition of material for manufacturing and prohibits all manufacturing after Oct. 19.

Axes, Hatchets, Adzes (Forged)—L-57 Sched. #II lists specifications governing kinds, grades, styles, sizes, weights, etc., to which these tools must conform.

Beds, Springs and Mattresses—L-49 (Amended) Amend. #1 permits assembly after Nov. 1 of final fabric covers on studio couches, sofa beds and lounges designed for dual sleeping and seating purposes otherwise completely fabricated prior to Nov. 1.

Bicycles—L-52 Amend. #2 concentrates production in two companies at rate of 10,000 per month, this quota being permitted to be exceeded only for military type bicycles.

Blackout and Dimout Lighting Fixtures—L-168 prohibits sale or delivery if fixtures contain critical material except orders with A-1-K or higher ratings and if fixtures contain no critical materials, orders must have A-4 or better rating. Every manufacturer is required to file report of specifications and sales with W.P.B. within 30 days of issuance date of order and every 15th of month thereafter.

Canned Fish—M-86-c directs canners to set aside for government agencies entire salmon pack from 3-1-42 to 2-28-43.

Canned Foods—M-237 restricts deliveries by canners of civilian pack of specified canned foods to not more than 35% before Dec. 1, nor more than 70% before April 1: use O.P.A. forms C F-1 and C F-2 for monthly reports. M-86-d permits salmon packers to deliver to designated government agencies any or all of pack made prior to Oct. 31, and if more than 60% of pack from March 1, 1942 to Oct. 31, 1942 is so delivered, packer may deliver not over 20% of total to other than government agencies.

Cans Made of Tinplate or Terneplate—M-81 Amend. #3 adds "olive, ripe only" to vegetables in table II. M-81 Int. #1 clarifies calendar year bases in relation to seasonal base period. M-81-b revoked effective Sept. 2.

Caskets, Shipping Cases and Burial Vaults—L-64 (amended) restricts use of iron and steel but permits use of in-

ventories of metallic finishing materials and hardware made prior to date of order; also permits use of lead for gaskets and soldering but restricts use of metal liners.

Castor Oil—M-235 establishes complete allocation control except for monthly orders up to 35 pounds; to press, bleach or alkalai refine any quantity; for medicinal purposes; use form PD-600.

Chemical Fertilizers—M-231 applies schedule of restriction by grade and state; also restricts use of organic and chemical nitrogen. M-231 Amend. #1 exempts deliveries for use on new grass plantings on airports or airfields of Army, Navy or Coast Guard.

Chemicals Production—P-89 (amended) Amend. #3 assigns ratings up to A-1-a for delivery of metals, parts and equipment, unit cost being less than \$250, and to all other orders up to A-1-c.

Chromium Chemicals—M-18-b (amended) provides for allocation control, restricts inventories and exempts Army-Navy-Maritime Commission orders.

Closures for Glass Containers—M-104 (amended) redefines "tinplate, terneplate, blackplate" and adds "waste."

Coconut Oil, Babassu Oil, Palm Kernel Oil and Other High Lauric Acid Oils—M-60-a freezes 25% of all stocks over 240,000 pounds and 25% of all future imports.

Coffee—M-135 Amend. #4 permits increase in roasters inventory to 90-day supply of green coffee.

Coil or Tube Assemblies—L-126 Sched. #3 limits the materials to be used in manufacture for refrigeration condensers or coolers.

Communications—Defines "operator" as all persons engaged in rendering telephone communication services including any telegraph and teletype-writer service whether private or public. L-148 Amend. #1 permits completion of delivery on or before Oct. 15 by manufacturers of wire communication equipment where 90% or more of the order has been delivered prior to Sept. 8. P-129 (as amended) Amend. #1 removes wire telephone systems from provisions of maintenance, repair and operating supplies order, P-130 (as amended) assigns ratings to deliveries of materials; restricts inventories, deliveries, use of ratings, use of materials, regulates sales of material from excess stock. L-50 (as amended) further restricts use of materials in the telephone industry, including telegraph and teletype-writer service conducted by telephone operators. L-148 limits nonessential production of wire telephone and telegraph equipment.

Construction—L-41 (as amended) further limits construction by lowering maximum expenditures in specified classes; use forms PD 200 and 200 A.

L-41 (as amended) Int. #1 clarifies meaning of "project" and "total cost of labor."

Construction Equipment—L-196 (as amended Sept. 28) extends date for filing used equipment inventory card W P B-1159 by October 30.

Construction of Rated Projects (Material Entering into)—P-19-i (amended) revokes provision regarding "protection of delivery dates" and deliveries of materials are to conform to applicable provisions of Priorities Reg. #1.

Copper Chemicals—M-227 Amend. #1 permits agricultural users to make purchases without filing forms with distributor or producer for an allocation.

Corundum—M-89 (amended) allocates ore, grain, and superfine flours with P D's 293, 293 A, 294 and 294 A.

Cotton Linters—M-12 Amend. #1 requires deliveries only to Commodity Credit Corp., and thence subject to direction of Director General.

Cotton Textiles for Agricultural and Food Processing Uses—M-218 provides for issuance of schedules governing various types or classifications and restricts use of material obtained pursuant to any schedule.

Cranes (Overhead Travelling)—M-225 provides for scheduling of production and delivery in accordance with specific directions by Director General for Operations.

Crop Cultivation Fabrics—M-218 Sched. #II assigns A-2 rating to purchase order; restricts inventories and establishes application procedure.

Cryolite—M-198 establishes complete allocation control.

Cyanamid—M-165 Amend. #1 revises order to include cyanides, melamine, guanadine and dicyandiamide.

Dairy Products Plants (Repair, Maintenance and Operation of)—P-118 (amended) extends order to December 31.

Dairy Supplies—M-218 Sched. #I assigns A-2 rating to orders for dairy textiles; restricts inventories and establishes application procedure.

Defense Projects (Material Entering into)—P-19-A (amended) revokes provision regarding "protection of delivery dates" and deliveries of materials are to conform to applicable provisions of Priorities Reg. #1.

Dichlorethyl Ether—M-226 establishes complete control; use forms PD 600 and 601.

Douglas Fir Logs—M-234 permits establishment of complete allocation control.

Drum Exterior Coatings—M-158 (as amended) restricts Class A coating to specific uses.

Dyestuffs—M-103 (amended) restricts sale and export use in fourth quarter of 1942 subject to specific exceptions; restricts use of meta-tolylene, diamene and anthraquinone after Nov. 1; restricts inventory.

Egyptian Cotton (Imported)—M-117 restricts sale, delivery and use subject to specific exceptions; restricts manufacture of stitching thread; and pro-

(Continued on page 48)

INCREASING BOX CAR PAYLOADS

WITH rail transportation bearing an increasing burden, the development of a new freight car loading device appears to provide excellent possibilities of helping to prevent possible freight bottlenecks.

This equipment has been designed to: (1) increase box car payloads; (2) eliminate damage to goods by preventing shifting in transit; (3) eliminate bracing; (4) speed up loading and unloading; (5) lessen turn-around time, thus permitting more trips per year per car.

The Utility Loader, developed by Evans Products Company, already is in daily service and may be installed as permanent equipment in either new or old box cars.

The equipment consists of specially designed permanent vertical members secured to the car posts or sides of car, and detachable longitudinal rails or "wall members" which operate between the vertical uprights. These may be raised or lowered to any desired elevation from car floor to eaves and are adjustable at 1/2-inch intervals.

This half-inch adjustment makes it possible in loading to securely tighten practically any type of load in a box car, thus removing all slack and eliminating the shifting of loads in transit, which is the major damage cause.

The wall members support sturdy cross members which are used to brace and hold the load. Like the wall members, the cross members are adjustable at 1/2-inch intervals. By a special locking device these cross members are forced and held against the load. It is this rigidity that prevents shifting.

The Loader can be divided into as many units as desired, each unit being firmly in position independent of any other unit.

The Association of American Railroads says that every payload ton added to individual carloads

equals approximately 40,000 additional freight cars; that the decrease of one day in turn-around time equals another 100,000 freight cars; that in combination this would be the equivalent of adding 140,000 freight cars to the available supply.

The Utility Loader is a development guided personally by E. S. Evans, President of the Evans Products Company, that has made many contributions in the transportation field.

Colonel Evans, who was in charge of overseas loading for the Quartermaster Corps during the First World War, has declared:

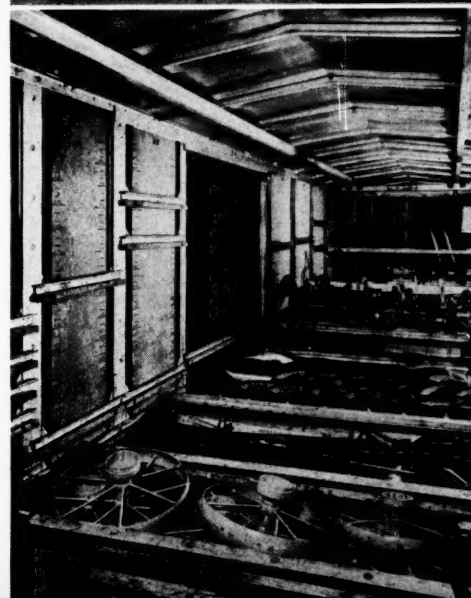
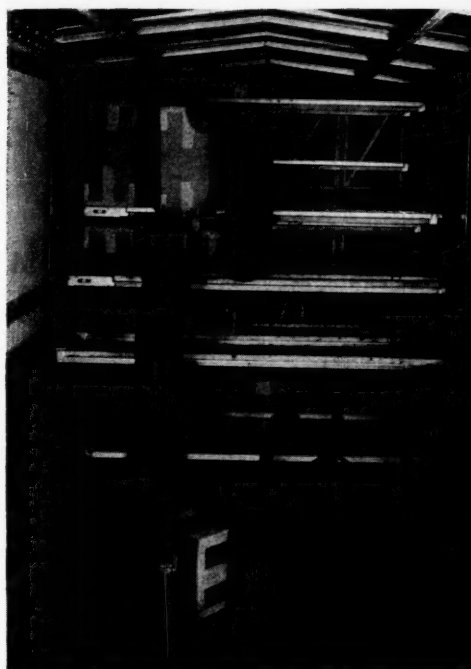
"Transportation is a weapon of war just as much as tanks and planes; so is the Utility Loader, which at this critical era in the history of transportation will aid railroads and shippers in solving the problem of moving war and civilian goods with maximum efficiency."

"For the first time it makes possible not only the heavier loading of freight cars, called for by the O. D. T., but maximum loading of all types of freight and box cars—no matter how fragile or how hazardous—without damage in transit."

The Utility Loader car is not to be confused with so-called "special equipment cars" which are limited to a special service or to certain types of loading or commodities. It is unlimited in its application and performance. This is indicated in the loads already carried which include: storage batteries; automobile fenders; 1,000 lb.

(Continued on page 62)

Top—The Utility Loader makes each small shipment an entirely separate load. Center—this special tool is all that is required to take the slack out of packaged loads. Bottom—A shipment of miscellaneous farm equipment of odd shapes and sizes in a Utility Loader car. A safe, secure load was made and transported without any damage.



New Orleans Shipyard Get New Ship Contract

The award of a contract for the construction of 15 additional Liberty Ships by the Delta Shipbuilding Company, Inc., New Orleans, Louisiana, has been announced by the Maritime Commission.

The company, which was already under contract to build 61 cargo ships of the Liberty type before the end of 1943, will deliver the additional vessels in the last three months of next year.

The Maritime Commission's ship construction program, which will produce 2,300 new ships by the end of next year, includes the building of more than 1,600 Liberty Ships.

New Patented Rosin Process Available

Clean and brilliant rosin, unusually free from impurities, is possible through a new producing process for which a patent (U. S. Patent 2,295,235) has just been issued to Jesse O. Reed of the U. S. Department of Agriculture. The patent has been assigned to the Secretary of Agriculture.

An essential part of the process is that the crude oleoresin is made "dry" or water free by adding turpentine near the end of the normal distillation period so that the whole mass can be readily filtered through media of various types, including paper.

By driving out the water in the rosin, the inventor has found that the water-soluble impurities, along with other impurities, can be easily filtered out, with the result that the final rosin is clean and brilliant in color. The turpentine added to the rosin to drive out the water need not be distilled off to produce a solid rosin, but may be retained to form a liquid product that can be han-

dled in the same manner as other sticky materials.

Persons in the naval stores industry who wish to use this new process should apply to the Secretary of Agriculture for a license. Further information on the process covered by the patent may be obtained by writing to the Naval Stores Division of the Bureau of Agricultural Chemistry and Engineering, U. S. Department of Agriculture, Washington, D. C.

Oil Pipeline Construction Hits Record Pace

Construction of the 24-inch war-oil pipeline from East Texas oil fields to Norris City, Illinois, hit a record pace of 8.15 miles completed in one day (on September 23), it was reported from the Little Rock, Arkansas, Headquarters of War Emergency Pipelines, Inc.

Moreover, for the past two weeks, an average of approximately six miles of pipe has been laid daily, a record that has not been beaten even for the laying of 10-inch or 12-inch pipe.

To date, weather conditions on the southern sections of the line have made the going difficult but, despite this, nearly 155 miles of pipe have already been placed in the ground, and the laying of the remainder of the line is going forward apace.

Ultimate oil-carrying capacity of the line will be 300,000 barrels of crude oil daily.

Reports state that the "big inch" oil carrier is already safely embedded beneath the Red, Little Missouri and Ouachita Rivers; that the spans beneath the Arkansas and the White Rivers are rapidly nearing completion, and that work on the crossing of the St. Francis, started late last week, will be finished in about 14 days.

War Statistical Progress Report

United States Authorized Program and Purchases
June 1940 to Latest Reporting Date

	As of June 30 (In millions of dollars)	As of September 30 (In millions of dollars)
Authorized war program	\$170,288	\$214,759
Contracts and other commitments	129,998	not available
Disbursements	34,765	50,486
Authorized war program broken down:	(In millions of dollars)	Percent of Total Program
Munitions	\$150,165	69.9
War construction	34,527	16.1
Miscellaneous	30,067	14.0
Total	\$214,759	100.0
	(In millions of dollars)	
Disbursements, September 1942	\$5,684	
Daily rate, September 1942	227	
Sales of War Bonds		
Cumulative, May 1941-September 1942	\$9,093,000,000	
September 1942	838,000,000	
Quota for September	775,000,000	
Federal Debt Under Statutory Limitation		
Outstanding, as of September 30, 1942	\$88,719,000,000	
PRODUCTION DATA		
Plant Expansion		
Government commitments for war plant expansion, June 1940-July 31, 1942; 2,011 projects	\$13,306,000,000	
Private commitments for war plant expansion, June 1940-August 31, 1942; 9,690 projects	3,277,000,000	

Sub-Contractors Wanted

For information, blue prints, specifications, etc., on the following items write or telephone the Philadelphia office of the War Production Board, quoting the symbol number of the item in question. You will then be put in touch with the engineer assigned to that item. Please quote the Manufacturers Record.

Ref. Keefer-52-1

An Indiana manufacturer is interested in securing subcontracting facilities for the manufacture of 50,000 or 100,000 WOODEN SHOOKS No. M-1917 as per size indicated. One Top, 1 1/4" thickness, 9 1/2" width, 18 1/2" length. One Bottom, 3/4" thickness, 9 1/2" width, 18 1/2" length. Two Sides, 3/4" thickness, 13 1/4" width, 18 1/2" length. Two ends, 1 1/4" thickness, 13 1/4" width, 9" length. Necessary equipment: Woodworking and nailing machines.

Ref. O'Hara-53-1

A New Jersey concern requires machining facilities for WATER CYLINDERS and POWDER CONTAINERS. Steel Castings furnished by Prime Contractor and are available immediately. Cylinders weigh approx. 8020# and Powder Containers weigh approx. 6030#. Machines required are Horizontal Boring Mills with 5' to 7' bar x 6' horiz. travel. Vertical Boring Mill 60" x 72" head clearance or an Engine Lathe 60" swing x 72" c to c. 3000 to 5000 hours required before March 1, 1943. Priority AA3.

Ref. O'Hara-55-1

A Penna. concern requires facilities to machine 9 CAST IRON ANVILS. Castings furnished by prime contractor, and are available for machining starting Oct. 10th. Deliveries of finished castings to start Nov. 15th. Largest casting 100" x 63" x 57"; weights from 36,675 to 60,000 lbs. Equipment required: 96" W x 70" H x 96" L Planer, Horizontal boring mill 3' bar and equipment to handle 30 tons. Priority rating AA1.

Ref. O'Hara-55-2

A Penna. concern requires casting and machining facilities for 4 large ANVIL SUB BASES. Size—185" L x 111" W x 45" H—Approx. Wt. 200,000 lbs. each. Material—Cast iron alloy. Equipment required:—Heavy cast iron foundry facilities, 125 tons. Handling Equipment:—10' W x 4' H Clearance x 16' stroke. Deliveries: one in Feb., March, April and May. Priority rating AA1. Patterns to be supplied by subcontractors.

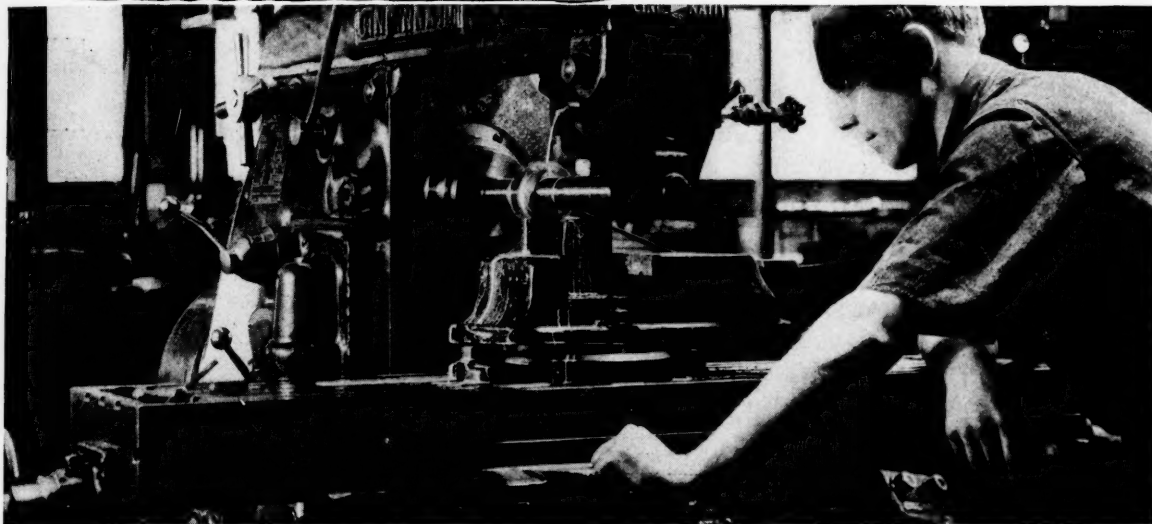
New Railroad Equipment

Class I railroads put 53,695 new freight cars in service in the first eight months of 1942, according to the Association of American Railroads. Of this number there were 33,402 box, 17,165 coal, 1,575 flat, 540 refrigerator, 100 stock, and 913 miscellaneous freight cars.

New freight cars on order on September 1, 1942, totaled 35,063, compared with 92,033 on the same day last year: 13,097 box; 17,946 coal; 2,262 flat; 868 refrigerator; 200 stock; and 690 miscellaneous freight cars.

Railroads in the first eight months of 1942 installed 514 locomotives of which 207 were steam and 307 were electric and Diesel. New locomotives on order on September 1, 1942, totaled 861 which included 323 steam and 538 electric and Diesel.

CUT OUT CUTTING OIL PROBLEMS!



Have priorities forced you to use new and unfamiliar materials—each with its own new cutting oil problem?

Do you worry about damaged work, poor results and the resultant loss of precious time? *If so, then let a Cities Service cutting oil specialist help you.*

There is no obligation for this service.

Just drop us a line on your letter-head and ask that a lubrication engineer call. But for your own protection, do it *today*.

An informative booklet, "Metal Cutting Lubrication," will be sent upon request to the personnel of cutting oil users. Mail the coupon below for your copy.

OIL IS AMMUNITION—USE IT WISELY!



Write to —
CITIES SERVICE OIL COMPANY
 Room 1326, Sixty Wall Tower, N. Y.
 or any of the following offices:
 CHICAGO • CLEVELAND • ST. PAUL
 KANSAS CITY • BOSTON • TORONTO
 or to
 ARKANSAS FUEL OIL COMPANY
 SHREVEPORT • ATLANTA • BIRMINGHAM

FREE! Just Clip and Mail

Please send me booklet on "Metal Cutting Lubrication." M.R.

Name

Firm Name

Address

City State

A LUBRICANT FOR EVERY INDUSTRIAL NEED

OCTOBER NINETEEN FORTY-TWO

New Priorities Put In Effect During September

(Continued from page 44)

vides for grading and reports; use form PD-597.

Electric Discharge Lamps (Incandescent, Fluorescent, etc.)—L-28-a limits production from Nov. 1 to specified types in Sched. A, and prohibits marking lamps except with manufacturers identification. Restrictions do not affect lamps for Army, Navy, Lend-Lease and for surgical purposes.

Electronic Equipment—L-183 prohibits manufacture except for orders rated A-3 or higher.

Electric Fans (Portable)—L-176 restricts manufacture except for government agencies; restricts transfer except as specifically authorized on form PD-556; and restricts inventory; use forms PD 500 and 556.

Elevators—L-89 Amend. #2 prohibits use of non-ferrous metals, stainless or alloy steel, cork or cork products except cork tile, and rubber tile.

Exports—M-148 (amended) permits Director General of Operations to grant Bureau of Economic Warfare specific authority to assign preference ratings to specific quantities of material for export and lifts restrictions with respect to deliveries so rated when restrictions apply to inventories in foreign countries. M-148 Amend. #3 permits Director General of Operations to grant Bureau of Economic Warfare authority to assign ratings to specific quantities of material for export and lifts restrictions on deliveries so rated when restrictions apply to inventories in foreign countries; establishes application or extension procedure.

Fats and Oils—M-71 (amended) restricts use in manufacturing and appends schedule A of permitted uses and percentages.

Feminine Wearing Apparel—L-85 (as amended) Int. #1 makes it clear that uniforms made for employees of privately owned ordnance plants must be cut in accordance with restrictions of order.

Fluid Milk Shipping Containers—M-200 restricts use of steel and manufacture by specifications and content.

Fluorescent Lighting Fixtures—L-78 Amend. #3 extends original order to 10-1-42.

Food and Plate Warming Equipment—L-182 restricts use of iron and steel in production to 25% of quantity used in 1941 and restricts deliveries to armed forces, War Shipping Administration, Defense Plant Corp., and Maritime Commission or to persons obtaining approval on Form PD-638 A. Requires filing form PD-638 before 10th of each month. Orders L-79 and L-83 no longer apply to products covered by L-182.

Footwear—M-217 curtails use of materials and colors in manufacture; restricts styling, tanning, dyeing, sales and deliveries; establishes general exceptions.

Fuel Oil—L-56 Amend. #3 curtails fuel oil delivered to consumers for central heating, etc. Other than private dwellings are restricted to 50% of tank capacity or total on hand of not over

275 gallons. From October 1, 1942, deliveries are controlled by coupons to be issued by O.P.A. Curtailment area includes Connecticut, Delaware, Florida east of Appalachicola River, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Nebraska, New Hampshire, New Jersey, New York, North and South Carolina, North and South Dakota, Ohio, Pennsylvania, Rhode Island, Vermont, Virginia, West Virginia, Wisconsin and District of Columbia. L-56 (as amended) establishes a "coupon note" procedure for area 4 from Oct. 1, whereby transfers are receipted for by the consumer with a "note" in lieu of actual coupon, to be issued later by Office of Fuel Administrator; notes will be redeemed within 15 days by turning in coupons when latter become available; similar transaction is obligatory between primary supplier and dealer. L-56 Amend. #3 Correction states original amendment omitted words "for use in space and control heating and cooling equipment or domestic and commercial water heating equipment" after words "fuel oil" in paragraph (C) (2).

Furfural—M-224 establishes complete allocation control; use forms PD-600 and 601.

Gas Cylinders—M-233 controls production and delivery; monthly reports required on form PD-662.

Glass Container and Closure Simplification—L-103 Sched. C Amend. #1 corrects typographical error in Sched. C subparagraph (a) (2) (iii).

Glycerine—M-58 Amend. #1 establishes application and report procedure; use forms PD-361, 362, 363 and 363 A.

Glycols—M-215 establishes complete allocation control; use forms PD-600 and 601.

Hemp Seed—M-82 (amended) restricts use except for growing of fiber or production of seed; restricts deliveries to orders placed by Commodity Credit Corp.

Imported Canned Beef—M-172 Amend. #1 extends holding period to 60 days after which stock is automatically released.

Incendiary Units—L-115 Amend. #1 passes authorization power for sale and delivery from U. S. Army or Navy to the Chemical Warfare Service of the Army.

Industrial Instruments—L-184 (as amended) prohibits use of chromium, nickel or alloy thereof in production of certain parts except for use under specified operating conditions; excepts items sold to another manufacturer or dealer for resale or items for use in foreign country (except Canada); prohibits delivery or acceptance of delivery; provides specifications for parts affected; requires rating of A-1-c or better for acceptance of order or delivery, with specified exceptions and requires installation of such items within 90 days; requires certification with specified exceptions; exempts parts to be used exclusively on Army or Navy vessels; and affords 90 day exemption from provisions of order to deliveries for Army, Navy or Maritime Commission.

Industrial Power Trucks—L-112 (as amended) provides for complete scheduling of manufacturer's production; use forms PD-385 and 556.

Iron and Steel—M-126 (as amended) Amend. #5 adds to and amends Lists A and C. M-126 (as amended) Amend. #6 adds to and amends List C, providing exemption for Army-Navy-Maritime orders.

Iron and Steel Scrap—M-24-a revoked effective September 9, 1942.

Kitchen Household and Miscellaneous Articles—L-30 (as amended Sept. 30) extends quota limitation on use of iron and steel for Group I and II products for month of October.

Machine Tools (Production and Delivery of)—E-1-b Amend. #2 provides that any portion of the Bureau of Ships quota which is not used on the first day of the fourth month preceding the month of delivery shall first be scheduled for any Bureau of Ordnance (Navy).

Men's Work Clothing—L-181 Amend. #1 permits use of short lengths and seconds in making pockets or waistbands; exempts blanket lining of reused wool from restrictions and exempts bar tacks from restrictions when needed for belt loops.

Metal Doors, Frames and Shutters—L-142 limits production but permits manufacture of airplane hangar doors and metal clad fire doors if metal does not exceed 24-gauge.

Metal Hairpins and Bobby Pins—L-104 (amended) restricts manufacture to 25% of base period production from Sept. 16 to Dec. 1942 and during each subsequent quarter restricts inventory to 30-day minimum operating requirement and prohibits bulk sales by requiring maximum packaging of 100 pins.

Molasses—M-54 Amend. #3 changes fiscal year to period October 1 through September 30; lifts restrictions on delivery use and acceptance outside continental U. S.

Motor Carriers—L-158 Amend. #2 permits producers to schedule production of replacement parts as if the orders therefor bore a rating of AA-2X.

Musical Instruments—L-37-A Amend. #1 restricts sale and delivery of frozen band instruments directly to armed forces.

Napthenic Acid and Napthenates—M-142 (as amended) establishes complete allocation control; use forms PD-600 and 601.

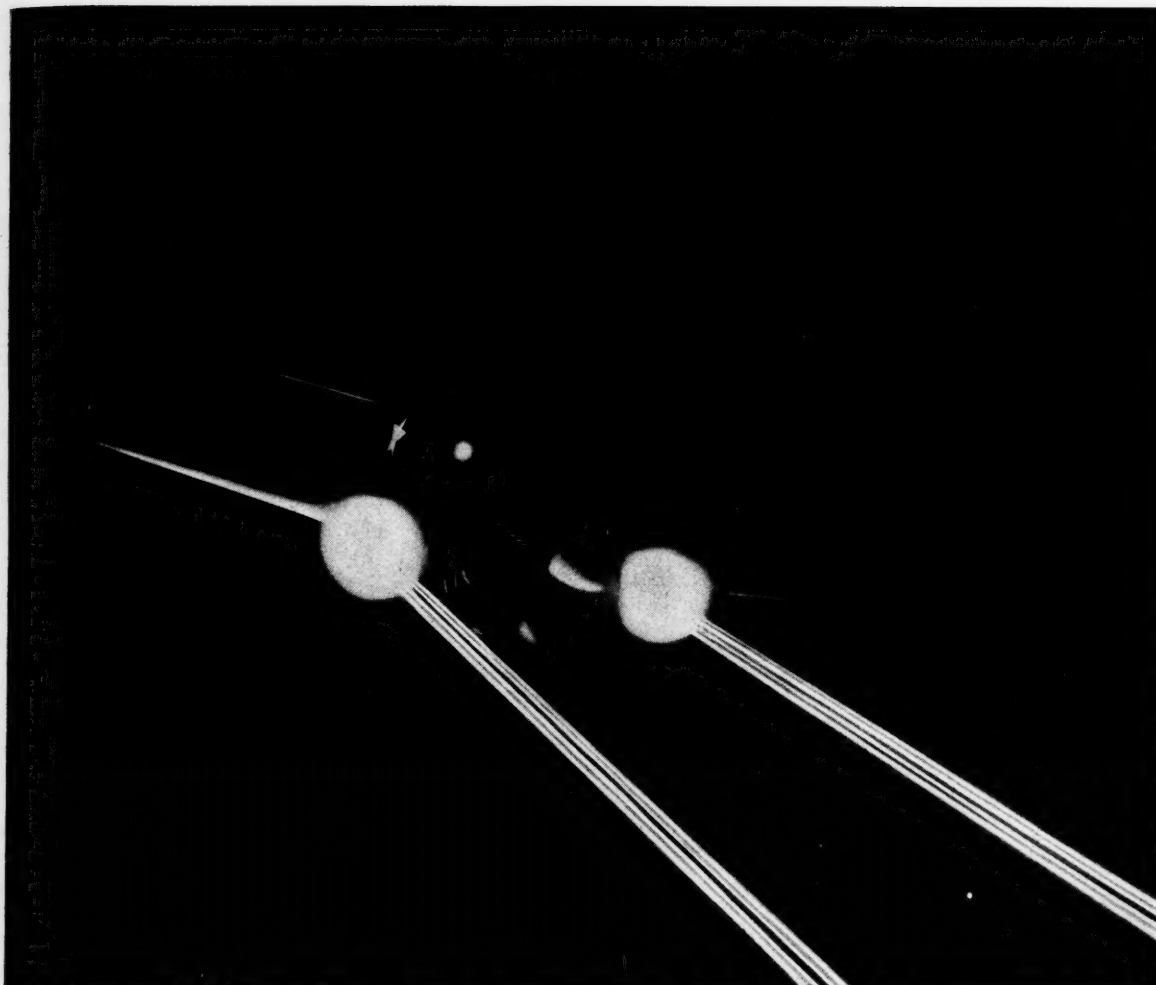
Natural Resins—M-56 (as amended) Amend. #1 modifies restrictions on use in road marking paint.

Noble Fir Logs—M-228 establishes complete allocation control; use forms PD-650 and 651.

Officers Uniforms—P-131 (amended) assigns A-1-i rating to obtain delivery of materials; revokes ratings of previous order on undelivered material; prohibits use of seconds or reject material; and restricts sale.

Oil and Gas Burning Space Heaters—L-173 Amend. #1 exempts domestic heaters burning gas and not using distribution pipes or ducts as integral parts from restrictions of original order.

Paper (Standardization and Simplification)—L-120 Sched. #III Amend. (Continued on page 58)



He's firing telephone wire at a Zero!

THIS fighter plane, with its six wing guns spitting fire, uses up enough copper every minute to make several miles of telephone line.

That's the right use for copper now — and it's the reason why we can't continue to expand our facilities to take care of the expanding Long Distance telephone traffic.

Right now, our lines are flooded with Long Distance calls. Most of them have to do with the war — they must have the right of way.

Will you help us keep the wires clear for war calls — industrial calls that send a plane down the assembly line — military calls that send it into the air against the enemy?

You can do it by keeping your own calls as few and as brief as possible. And you'll be bringing Victory that much nearer.

Bell Telephone System



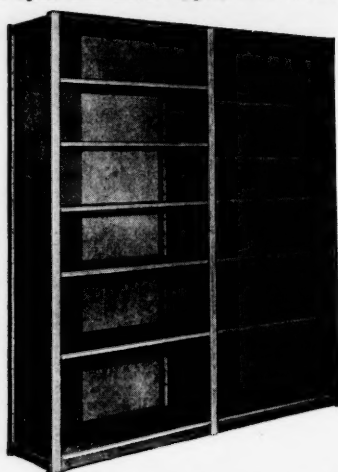
OCTOBER NINETEEN FORTY-TWO

49

New Methods and Equipment

Lyon Shelving Engineered in Wood

Because of steel priority, Lyon Metal Products, Incorporated, Aurora, Ill., is now offering quickly adjustable shelving engineered in wood. Designed for saving floor space in wartime and other industries, the Lyon wood shelving is made in open and closed types, with sections



Lyon Adjustable Shelving in Wood

36 inches wide, 84 and 96 inches high, and 12, 18, and 24 inches deep. Top, base, shelves, braces, arms and uprights are made in solid hardwood, while side panels, back panels on closed type are 1/4-inch plywood. The shelving is finished with a green tinted preservative coating that reduces moisture absorption, and includes such features as dividers, bin fronts, adjustable shelves and shelf boxes. It is easy to set up.

Asbestos-Faced Board Alternates for Steel and Rust-Proofing Materials Protect Pipe Line

Since the use of steel has been drastically restricted, a new board of laminated construction, made by Philip Carey Manufacturing Company, Lockland, Cincinnati, Ohio, is receiving considerable attention. It is claimed to be rustproof, moisture-resistant, strong, fire-retardant. It offers advantages for industrial applications of many kinds, such as air ducts, joist liner, partition construction, shop and factory ceilings, elevator shaft protection, etc. It is available in sheets 33 inches wide and 60 inches long, especially suitable for standard joist spacing of 16 inches.

The company is producing an asbestos felt which is being used to wrap the new 24-inch war emergency pipe line, from Longview, Texas, to Salem, Illinois, to protect it from corrosion. Wrapping is done speedily and with precision by a

machine which first applies a waterproofing coating as the pipe revolves. The felt is wrapped by Carey machines leased and serviced by Perrault Brothers, Tulsa, Okla.

Instantaneous Starting Fixtures for Fluorescent Lighting

Employing a new method of ballasting to give positive, instantaneous starting, fluorescent lighting fixtures are now available for industrial plant lighting applications, according to R. & W. Wiley, Inc., Buffalo, N. Y., manufacturers. The lamps come on fully at the turn of the



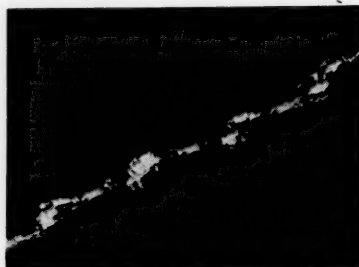
*Instant-Starting Fluorescent Lighting
Fixtures*

switch as in the case of incandescent lighting. The conventional starting device is eliminated in the new fixtures. Other features claimed are positive starting at lower atmospheric temperatures and lower voltage, no radio interference. The fixtures are available in types for all applications, continuous or separate units, in close to ceiling or suspended mounting, open reflector or lowered models.

Cellophane Bubbles May Find War Uses

Since chemists have succeeded in trapping air in a continuous stream of Cellophane bubbles, "sleeping on air" may soon be a realization. The resiliency and buoyancy of these tiny bubbles wrapped in cellophane open up a large field of interesting possibilities for their application.

The material known as "Bubblfil" has been developed by E. I. du Pont de Ne-



mours & Co., Wilmington, Del., whose Rayon Division is now manufacturing it in its Tennessee plant. Tests show that the cellulose bubbles are as buoyant as the imported kapok.

The new product promises well for life-jackets, the air compartments of life-boats and life-rafts, and bridge pontoons, formerly filled with sponge rubber. If punctured by bullets or falling debris, the "Bubblfil" will keep the craft afloat, it is declared.

KEEPING PACE

War economy has been a severe test on America's industrial forces. Many have successfully won the battle of conversion from the manufacture of peace time articles to mass production of war materials. Numerous others, however, have had their normal business drastically curtailed or interrupted by priorities in essential raw materials, labor problems, or distribution methods.

For many years we have specialized as consultants to industrial corporations on problems concerned with keeping pace with changing conditions adversely affecting business.

We shall be pleased to discuss how our facilities may be of aid in your specific problem.

Bitting
INCORPORATED

CONSULTANTS
SURVEYS REPORTS
MANAGEMENT

20 Exchange Place, New York

**TENTS
TARPAULINS
WINDBREAKS
ROAD MATS**

CONTRACTORS' SUPPLY DEALERS in every state sell the **Fulton line**. Specify **SHUREDRY** and **FULTEX** Tents, Tarpsaulins, and Windbreaks — anything made of canvas. Also **Fulco Road Mats** and **Burlap**. If your dealer cannot supply you, ask our nearest plant for catalog

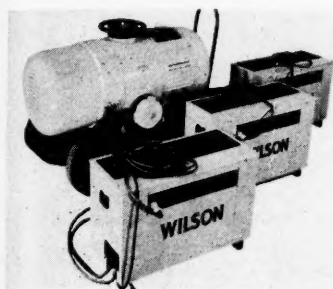
write for Prices

Fulton Bag & Cotton Mills
Manufacturers since 1870
Atlanta St. Louis Dallas Minneapolis
New York New Orleans Kansas City, Kan.

MANUFACTURERS RECORD FOR

Production Capacity of Welding Generators Increased by Arc Control Stations

Greater welding output per machine, better control by the operator and improved welds on thin gauge metal are obtainable, it is claimed, through the use of the HONEY BEE Arc Control Station recently developed by Wilson Welder and Metals Company, New York. Made in capacities of 75 amperes and 150 amperes, these arc control stations are an auxiliary electric device, connected in series with the welding circuit of any constant potential arc welding generator. Since most convention drooping voltage generators may be converted quickly and easily to constant potential, Wilson supplies for this purpose a quick change switch mounted on the generator. A



portable switch held in the operator's hand gives the operator remote control of the welding current within predetermined limits. If desired, this switch may be combined with the electrode holder. When two or more Arc Control Stations are hooked up to a single generator, a like number of welding arcs can be operated simultaneously. Each operator can regulate his own current and weld as he sees fit without affecting the other. To sum up briefly, the Wilson Arc Control Station accomplishes: closer control of the welding unit; individual remote control of current; current control to assure sound smooth welds at the end of each bead, and maximum of each arc welding generator.

New Oil Aids Production of Quick-Drying Paint

The National Lead Company, New York City, has introduced a new oil which is expected to aid the paint industry in the production of quick-drying paints. This development comes when supplies of other hard drying ingredients used by the paint trade have become increasingly hard to obtain. The new product, known as "710 Oil," is an activated linseed oil product produced by a special process. It is made entirely of linseed oil and contains no other rapid bodying oils or special resins.

New Transparent Plastic

The development of a new transparent plastic having many times the abrasive resistance of other clear plastics, according to the manufacturer, has been announced by the Columbia Chemical Division of the Pittsburgh Plate Glass Company. Because of priorities and other restrictions, the new plastic will not be available for any but experimental purposes for several months.

A Time-Saving Valve **FOR IMPORTANT PRODUCTION LINES**

In these critical times when uninterrupted production is all-important, every minute saved in maintenance means more productive hours.

Lunkenheimer "N-M-D" (non-metallic disc) Valves cut maintenance time to the bone, because it's only a matter of minutes to renew a worn disc and keep the valve on the job.

Users of Lunkenheimer Valves are profiting from their wise policy of buying highest quality. They are getting continual tangible evidence of what really good valve performance means in dependable and low-cost service.

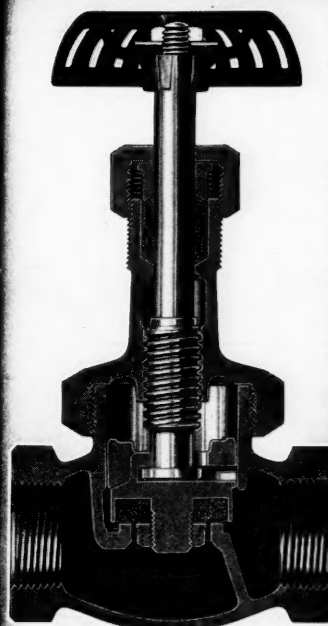


Fig. 123 "N-M-D"

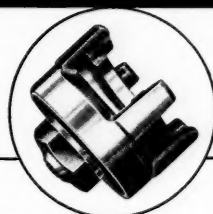
Non-metallic Disc
Easily Renewed

Since virtually all materials used in the manufacture of valves are on the list of critical materials, valve users are urged to furnish the highest possible preference ratings and proper "end use" Allocation Classification Symbols on their orders. This will be of mutual helpfulness.

ESTABLISHED 1862
THE LUNKENHEIMER CO.

"QUALITY"
CINCINNATI, OHIO, U. S. A.

NEW YORK CHICAGO
BOSTON PHILADELPHIA
EXPORT DEPT. 318-322 HUDSON ST., NEW YORK



With a few spare disc holders complete with discs on hand, the time required for renewing can be cut to almost nothing.

LUNKENHEIMER VALVES

Industrial News

"Caterpillar" Business Training Course

A Business Training Course for high school graduates from 16 to 18 years of age, inclusive, has been established at Caterpillar Tractor Co., Peoria, Ill. Its objective is the development of qualified young men in accounting and other general office procedures. The course is for three years and will consist of actual participation in work of the various departments and supervised classroom instruction.

Chamberlain Made General Sales Manager of Jenkins Brothers

Charles C. Chamberlain has been named General Sales Manager of Jenkins Brothers, New York City, manufacturers of valves and other products. He was formerly publicity manager for the company.

United States Pipe and Foundry Plant on 24-Hour Basis

United States Pipe and Foundry plant at Birmingham illustrates what can probably be done in filling more orders from private industry by going on a 24 hour basis.

This company says, while carrying a large amount of defense orders, the new working schedule will enable it to do more work in its iron foundry and machine shops.

1942 National Safety Congress and Exposition

Because of the vital part now being played by accident prevention in the war effort, the 1942 National Safety Congress and Exposition, to be held in Chicago October 27-29, will be one of its most important meetings. Headquarters will be at Hotel Sherman.

New Officers for American Society of Mechanical Engineers

Harold V. Coes, vice-president Ford, Bacon & Davis, Inc., New York, has been elected president of the A. S. M. E..

Vice-Presidents elected to serve two-year terms on the Council of the Society are: Joseph W. Eshelman, president of Eshelman & Potter, Birmingham, Ala.; Thomas E. Purcell, general superintendent of power stations of the Duquesne Light Company, Pittsburgh, Pa.; Guy T. Shoemaker, vice-president Kansas City Light & Power Company, Kansas City, and Walter J. Wohlenberg, professor of mechanical engineering, Yale University.

Military Heels from Reclaimed Rubber

Military heels made from rubber reclaimed from an old shock absorber manufactured in 1872 have been sent to General Douglas MacArthur in Australia by The B. F. Goodrich Company. The shock absorber was salvaged from a railroad wreck near Tiffin, Ohio, 60 years ago by the father of William E. Daywalt of that city who sent the slab to the Akron company during the recent national scrap rubber drive. The heels were sent to the General by Charles Bridges of Akron, an employee of Goodrich, who served in the famous Rainbow Division under General MacArthur in World War I as a member of the 117th Engineers.

Trade Literature

TRUING AND DRESSING TOOLS—

Booklet—"How to Use Truing and Dressing Tools for Better Grinding," illustrating various types of truing and dressing tools, and presenting valuable information relative to the selection and proper maintenance of the right wheel for a specific grinding operation.

Norton Company, Worcester, Mass.

"Tremendous Trifles"—A guide book to greater war production, dealing with a great number of little things that "can make big decisions rest in favor of United Nations' Armies." The publication was prepared for Army Ordnance by W. W. Sult, Director of Publicity, Mullins Manufacturing Corporation, Salem, Ohio, manufacturer of stamped metal parts, etc. Designed to encourage submission of ideas by civilians, as well as ordnance men, making for improvement of war output. To make sure that such ideas are given immediate and careful consideration, a special section has been set up within Army Ordnance Department to receive them. It is said that 100,000 copies have been distributed to key men in Ordnance and industry.

RIVETING EQUIPMENT—

Catalog 232—illustrating and describing many of the 700 styles and sizes of riveters in the complete Hanna line of hydraulic and pneumatic squeeze riveters.

Hanna Engineering Works, 1765 Elston Ave., Chicago, Ill.

ALLIS-CHALMERS LITERATURE—

Bulletin B6050-H—illustrating and describing Allis-Chalmers centrifugal pumps, for every purpose;

Bulletin B6052-C—devoted to Lo-Maintenance Motors, with illustrations, descriptive data and typical applications;

Bulletin B6051-C—designed to simplify the problem of selecting the correct V-Belt Drives for wartime applications;

Bulletin B6177-A—presenting a complete catalog-review of basic machinery for the processing industry.

Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

MICROMAX THERMOCOUPLE PYROMETERS—

Catalog N-33A—56 pages, for measurement and control, designed to give wartime pyrometer users information about available instruments—indicators, recorders and controllers—and about thermocouples and accessories.

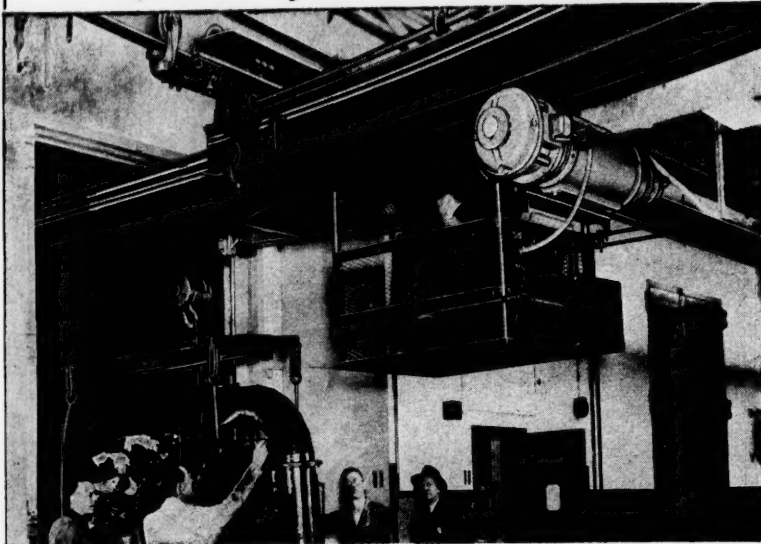
Leeds & Northrup Company, 4934 Stenton Ave., Philadelphia, Pa.

GENERAL ALL-BOUND BOXES—

Chart—presenting instruction in the assembling and closing of General All-Bound Boxes, with photographs and drawings illustrating various steps in the assembly and tools used.

General Box Company, 508 N. Dearborn St., Chicago.

(Continued on page 54)



Proven over the years by

AMERICAN MONORAIL EQUIPMENT

FROM raw materials to finished products, in every operation, American MonoRail Equipment is speeding up production in countless numbers of plants. There is no installation too large and none too small that will not increase production, reduce accidents, reduce employee fatigue, release skilled hands from handling jobs and result in savings of time and money.

American MonoRail Engineers will gladly show you how American MonoRail Equipment will do all these and more in your plant. Write today, no obligation.

THE AMERICAN MONORAIL CO.

13118 Athens Avenue

Cleveland, Ohio





(below)
Section thru
wood-slat
curtain.
Note how
the design
sheds
weather.

CORNELL ROLLING DOORS IN WOOD

WPB order L-142 limiting use of steel doors, places the tested CORNELL WOOD ROLLING DOORS in the forefront to conserve critical war-time materials. Retain the important rolling door economy of floor space, side wall and ceiling space.

Also ask about
Cornell Wood
Vertical-lift doors,
Canopy and Bi-fold
doors.

Cornell Wood Rolling Doors consist of interlocking wood slats, strung on metal bands placed 2' to 3' apart, and operating plywood guides, with light formed-plywood hood covering the coil. Weather-protected. Can be motor operated.

CORNELL IRON WORKS, INC.
36TH AVE. & 13TH STREET LONG ISLAND CITY, N. Y.

SINCE 1928

Send for complete details, specifications on
Cornell Doors and Grilles. Ask for Catalog T.

We have helped

many businesses that have brought
us their financial problems.

Correspondence invited.

BALTIMORE COMMERCIAL BANK

GWYNN CROWTHER, President

BALTIMORE, MARYLAND

Member Federal Reserve System
Member Federal Deposit Insurance Corporation

EPPINGER AND RUSSELL CO.

Wood Preservers Since 1878

All kinds of Structural Timbers and Lumber
Pressure Treated with Creosote Oil or

DU PONT C Z C

80 EIGHTH AVE., NEW YORK, N. Y.

POLES • CROSS ARMS • PILING • TIES
POSTS, BRIDGE AND DOCK TIMBERS

Treating Plants—JACKSONVILLE, FLA. • LONG ISLAND CITY, N. Y.

AT PIEDMONT SHIRT CO., TOO —NORTHERN HARD Maple



New plant of the Piedmont Shirt Co., Greenville, S. C.—floored with
MFMA Northern Hard Maple.

*"Takes on a Smoother
Appearance with use"*
says

H. S. ABRAMS, Supt.

"Since flooring our building (the home of nationally-advertised Wings Shirts) we wish to express our deepest satisfaction with the Northern Maple stock which we used," says Mr. H. S. Abrams. . . . "We have noticed from month to month that the flooring takes on a better and smoother appearance with use. We are particularly pleased with the hardness of the floor and the fact that there is no possible chance of it splintering. This was a constant source of trouble to us in our old building."

In mills everywhere, Hard Maple's daily satisfaction and eventual economy have been proved through the years. When you build, remodel, or re-floor, don't fail to investigate MFMA (trade-marked, guaranteed) Northern Hard Maple. Ask your architect.

MAPLE FLOORING MANUFACTURERS ASSOCIATION
1797 McCormick Building, Chicago, Illinois

Write for folder on heavy-duty finishes for old or new Maple floors,
which further reduce cleaning costs. See Sweet's, Sec. 11/82.

Floor with
MFMA Maple
(NORTHERN HARD)

TRADE LITERATURE

(Continued from page 52)

LESSONS IN GRINDING—

Folder—Dealing with a new series of motion pictures, entitled "Lessons in Grinding," produced by Norton Company, Worcester, Mass., and designed to aid the training of apprentices in war-work plants; films are now available to industrial apprentice schools, army and navy training schools, all other classes where machine shop practice is being taught, colleges, universities and vocational schools; intended to present merely the fundamentals of grinding in a way easily understood.

TOWMOTOR LIFT-TRUCK EQUIPMENT—

Manual—"The Inside Story of Towmotor—The 'One-Man Gang'," illustrated and printed in colors, presenting a complete lift-truck story to aid production and management men alike.
Towmotor Company, E. 152nd St., Cleveland, Ohio.

FOSTORIA PRODUCTS FOR PEACE AND WAR—

Brochure—Flashes No. 942, illustrated, describing infra-red as a tool for peace—war, and suggesting to industrialists uses for the process where paint baking, drying, dehydrating and preheating are involved.
The Fostoria Pressed Steel Corporation, Fostoria, Ohio.

CLAY PIPE FOR YARD LINES AND HOUSE CONNECTIONS—

House Organ—Vol. 1, No. 5, "Yard Lines"; House Organ—Vol. 1, No. 5, "House Connections."

W. S. Dickey Clay Manufacturing Company, Kansas City, Mo.

LEAD PAINTS FOR PROTECTION—

House Organ—"Lead" September, carries articles on use of lead paints for protection and appearance, with illustrations showing examples.

Lead Industries Association, 420 Lexington Ave., New York.

WESTINGHOUSE A-C WELDERS—

Booklet B-3090—8 pages, describing a-c welders for use with the Unionmelt process.
Westinghouse Elec. and Manuf'g. Co., East Pittsburgh, Pa.

Twenty-Five Years With Mid-States Gummed Paper Company — Coincident with its twenty-fifth anniversary, Mid-States Gummed Paper Company, Chicago, has issued a booklet, printed in colors and uniquely bound and illustrated, Mid-States Gummed Paper Company has been making gummed paper and cloth since 1917.

FIRE RETARDANT—

Booklet—"The New Weapon Against Fire," devoted to Firepel, a chemical development for the treatment of unfinished wood.
Albi Chemical Corporation, 9 Park Place, New York City.

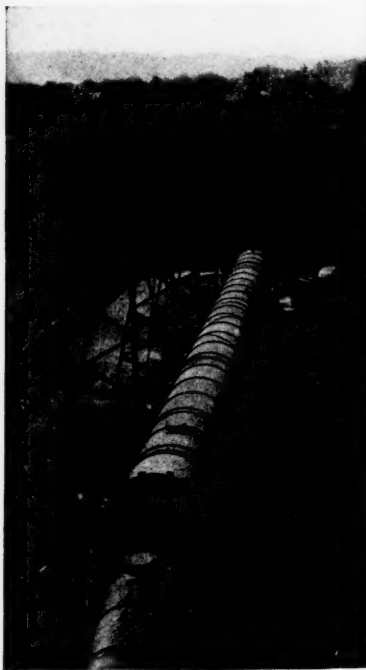
Rand McNally Bankers Directory, 1942 Fall edition, just published, is valuable as a standard work giving the financial condition of the banks of the country with the names and titles of the various banks and a five year list of discontinued banks. It shows as well the name of the nearest bank to a non-bank town. Here is an encyclopedia of information; an indispensable index arranged for easy access providing detailed information of the banks of the country, as well as a list of bank recommended attorneys and a digest by states of banking and commercial laws.
Rand McNally & Co., New York-Chicago-San Francisco—\$15.00.

Birmingham Plant of Chicago Bridge and Iron Company

In the September, 1942, issue of The Water Tower, house organ published bi-monthly by Chicago Bridge & Iron Company there appear, among other interesting illustrations, three views of different products manufactured at the Birmingham plant.

Space does not permit reproducing them all, although they show the importance of some of the products of this plant in the heart of the South, but of striking interest it seems is the one reproduced here, showing a tower 8 feet in diameter by 128 feet, 6 inches, loaded on three cars for shipment to a Texas refinery.

The Birmingham plant, incidentally, is protected against any emergency. A plant protection unit has been set up, consisting of five departments, each having its own leader or captain.



This refinery tower, 8 feet in diameter by 128 feet, 6 inches, is loaded on three cars at the Birmingham plant for shipment to a Texas refinery.



THIS grizzly game of war calls for *big loads* . . . moved fast, economically, with no time out for "weak-sister" equipment. This time it's "for keeps."

If that's the kind of haulage you're shooting for in the battle for war production, find out what Plymouth Gasoline and Diesel Locomotives can do for you.

Rugged power and speed have made Plymouth the buy-word for years among peace-time producers of rock products. Those same characteristics make it the password to efficient haulage in the front lines of war production.

We are all-out for Victory. If you are on a similar schedule, perhaps we can be of assistance.

PLYMOUTH GASOLINE and DIESEL LOCOMOTIVES

PLYMOUTH LOCOMOTIVE WORKS
Division of The Fate-Root-Heath Co. PLYMOUTH, OHIO, U. S. A.

mmmed
ch its
Gum-
ued a
lquely
mmmed
mmmed

Fire."
pment
Place,

2 Fall
as a
condi-
th the
s and
ks. It
bank
cyclo-
nsable
riding
of the
econ-
states
icago-

cago

y
The
ed bi-
Com-
inter-
differ-
Bir-

ucing
e im-
f this
ut of
ne re-
3 feet
oaded
Texas

lly, is
v. A
t up,
hav-

meter
three
ship-

FOR



EVEN NOW, in the midst of unprecedented production of the materials of war, industry is mapping the strategy for the post-war period. On countless drafting boards, industrial engineers are placing on paper their interpretation of expanded plant facilities that will be needed to replace the depletions of war. Looking to the future with confidence, executives charged with the responsibility of guiding their industries through the uncharted shoals of war have not ceased to think of the brighter future that must come. With the courage of their convictions, they are keeping their engineers planning, drafting, thinking ahead of present day restrictions and difficulties.

In charting your industry's post-

war course, be guided by adequate and accurate facts. The Texas Gulf Coast region has so much to offer in proven raw materials available to industrial plants, in strategic geographical location, in climate and population, in adequate NATURAL GAS for fuel supply. Houston Pipe Line Company's far-flung pipe line system gathers NATURAL GAS from numerous gas fields, is strategically lo-

cated across the length and breadth of the Texas Gulf Coast. For specific information about this region's resources and advantages in relation to your processes and products, write, wire or telephone the Research Department, Houston Pipe Line Company, Petroleum Building, Houston, Texas. Your inquiry will be kept confidential, and will not obligate you in any way.

For Victory Buy United States Savings Bonds

HOUSTON PIPE LINE CO.

Subsidiary of Houston Oil Company of Texas

Wholesalers of
Natural



South's Construction Awards Gain

(Continued from page 38)

months. Not since June has the total been above the \$17,928,000 figure for September. A year ago the value of Southern highway work was placed at \$15,072,000. Much of the current activity is directly connected with war construction. Texas led the list with contracts amounting to \$4,689,000; Virginia next, total, \$3,428,000.

Significant, is the rise in airport and similar projects, which contributed so materially to the substantial increase in engineering awards, as compared with

the current preceding month. There was also an upward trend in sewer and water works projects, in the further effort to provide the necessary sanitation and water for areas congested by the continually shifting war worker problem.

The total for September's engineering projects was \$21,363,000, or almost three times August's \$7,365,000, but slightly less than September a year ago, when governmental electrification work was at the 1941 peak and water and sewer projects were at a minimum. The situation is now reversed. Electric work of government origin is now lower and sewer and water projects are eight times the value of the September, 1941, level.

Aluminum Production in Arkansas

(Continued from page 33)

required to separate the aluminum from the oxygen and three-quarters of a pound of carbon electrode is burned. In fact, if all of the materials used in the different steps of mining the ore to the manufacture of metallic aluminum are taken into account, it will be found that nine pounds of raw material is required to make one pound of aluminum from the higher grade ores. The lower grades of bauxite require not only more ore but also additional amounts of the other materials as well, so that at times more than ten pounds of raw material is utilized in the production of one pound of metallic aluminum.

Carbon electrodes are an important item. They are made by forming a hot mixture of coal-tar pitch and calcined petroleum coke in molds under hydraulic pressure. These electrodes are then baked to remove the volatiles from

(Continued on page 64)

South's Construction by Types

	September, 1942 Contracts Awarded	September, 1942 Contracts to be Awarded	Contracts Awarded First Nine Months 1942	Contracts Awarded First Nine Months 1941
Alabama	\$24,903,000	\$11,135,000	\$136,746,000	\$227,929,000
Arkansas	14,973,000	7,428,000	89,324,000	129,673,000
Dist. of Col.	3,074,000	2,402,000	61,692,000	45,720,000
Florida	33,170,000	5,589,000	246,237,000	99,399,000
Georgia	23,754,000	14,522,000	167,383,000	146,771,000
Kentucky	1,476,000	6,210,000	103,014,000	120,685,000
Louisiana	30,636,000	16,467,000	206,357,000	183,203,000
Maryland	15,651,000	4,090,000	167,551,000	118,982,000
Mississippi	17,930,000	15,658,000	170,278,000	67,001,000
Missouri	9,390,000	1,512,000	167,456,000	96,005,000
N. Carolina	6,103,000	6,642,000	161,943,000	94,072,000
Oklahoma	3,718,000	6,970,000	162,111,000	139,599,000
S. Carolina	20,041,000	6,858,000	86,610,000	56,511,000
Tennessee	28,602,000	9,660,000	262,996,000	159,477,000
Texas	61,384,000	48,280,000	847,444,000	380,585,000
Virginia	18,381,000	5,467,000	237,348,000	130,114,000
W. Virginia	232,000	4,240,000	35,990,000	77,427,000
TOTAL	\$318,458,000	\$173,130,000	\$3,313,480,000	\$2,264,153,000



BEFORE AFTER

FIRST SQUADRON ARMORY, PHILADELPHIA, PENNA.
6,000 SQ. FT. WHITE CORRUGATED WIRE
GLASS SKYLIGHT

SPECIFY
ORIGINAL SOLID CORRUGATED
WIRE GLASS SKYLIGHTS

PENNSYLVANIA WIRE GLASS CO.
1612 MARKET STREET
PHILADELPHIA, PENNSYLVANIA


CREOSOTED

Piling, Poles, Lumber, Cross Arms,
Cross Ties

Also Wolmanized Lumber

Decay and Termite Proof—Can Be Painted

Docks for Ocean Vessels



Atlantic Creosoting Co., Inc.
Norfolk, Savannah, New York

Plants at: New Orleans; Winnfield, La.; Louisville, Miss.;
Savannah, Ga.; Jackson, Tenn., and Norfolk, Va.

The Arundel Corporation

BALTIMORE, MD.

Dredging—Construction—Engineering

Distributors of Sand-Gravel-Stone and Commercial Slag

A COMPLETE ORGANIZATION

Our complete organization with years of experience in successfully executing large construction contracts of various kinds is prepared to undertake the construction of earth, masonry and concrete dams, drydocks, dredging of all kinds, river and harbor improvements, deepening channels, hydraulic filling and rock work, tunnels, railroad construction, sewers and waterways.

PERSONNEL:

RICHARD A. FROHLINGER, President
JOSEPH G. KUHN, Executive Vice-President
JOSEPH N. SEIPERT, Secretary & Treasurer
T. K. SHAUGHNESSY, Assistant Treasurer
E. L. WADE, Assistant Secretary
C. WARREN BLACK, Vice-President in Charge of Engineering and Construction

GEORGE H. BACOT, Vice-President in Charge of Materials' Production
JOHN A. REILLY, Vice-President in Charge of New York & New England Areas
L. EARL DIXON, Vice-President in Charge of West Coast Operations

MAIN OFFICE: Arundel Building, Pier 2, Pratt Street, BALTIMORE, MD.

Branches: BROOKLYN, N. Y.—MIAMI, FLA.

SAND—GRAVEL—BRICK FILTER GRAVEL

Washed Sand and Gravel for Concrete

Roads and Buildings

Filter Gravel, all sizes—Building Bricks

FRIEND & CO., INC. River St., Petersburg, Va.

POWER PLANTS—WATER WORKS

Contractors

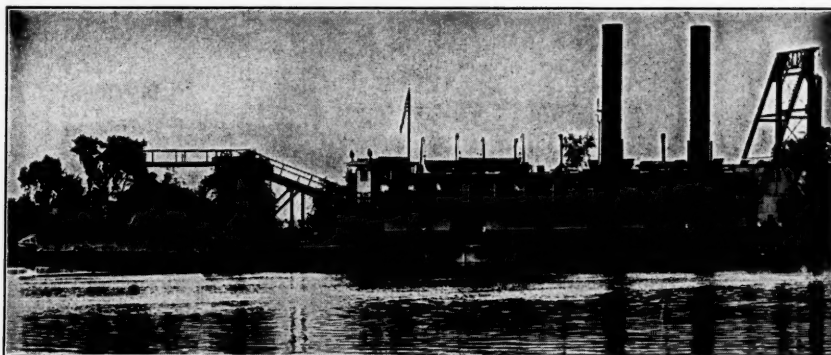
BURFORD, HALL & SMITH

140 Edgewood Ave., N. E.

Atlanta, Georgia

DREDGING

FILLING, LAND RECLAMATION, CANALS, PORT WORKS
RIVER AND HARBOR IMPROVEMENTS—DEEP WATERWAYS AND SHIP CHANNELS



We are especially equipped to execute all kinds of dredging,
reclamation and port works in Southern waters.
Correspondence invited from corporate and private interests everywhere.

Contractors to the Federal Government

ATLANTIC GULF AND PACIFIC CO.

NEW YORK: 15 Park Row

HOUSTON, TEXAS: Scanlan Building

New Priorities Put In Effect During September

(Continued from page 48)

#1 further defines "Special name watermark."

Petroleum—M-68-6 exempts from paragraph (c) (8) of order, wells drilled in Hugoton Field in Kansas and Oklahoma. P-98-b assigns rating of A-1-a and A-2 to delivery of material for maintenance, repair and operating supplies extending P-98 to Jan. 1, 1943.

Phosphorus—M-230 establishes complete allocation control; use forms PD-600 and 601.

Phthalic Anhydride—M-214 establishes complete allocation control; use forms PD-600 and 601.

Figs' and Hogs' Bristles—M-51 (as amended) Amend. #3 amended to include bristles 2 inches or longer, permits use of not over 55% in manufacture of products with specified exceptions.

Pilehard—M-206 (amended) permits allocation of supply and specifically directs time, manner and quantities of which deliveries to particular persons shall be made or withheld.

Plumbing and Heating Simplification—L-42 Amend. #1 Sched. #1V prohibits coating cast iron soil pipe.

Portland Cement—L-179 Amend. #2 permits manufacturers to store tested cements for joint common use; cement must be tested by National Bureau of Standards.

Rayon Yarn—M-37-c Amend. #2 amends directions with respect to ex-

port orders and allocation control.

Refrigeration and Air Conditioning Machinery and Equipment—P-126 (amended) extends order, affecting material for emergency servicing, to October 31. L-38 Amend. #4 further stops production of non-essential products and releases from dealer, distributor and producer certain items of equipment; use form PD-520.

Refrigerators (Domestic Mechanical)—L-5-d Amend. #2 permits release of frozen refrigerators and provides for bulk releases from manufacturers' and affiliated distributors' stocks; use forms PD-430 and 431.

Research Laboratory Supplies and Equipment—P-43 Amend. #2 correctly restates Amend. #1.

Rubber and Balata, etc.—M-15-b (as amended) restricts consumption, distribution, manufacture, acquisition, sale and importation; restricts sale and destruction of tires and scrap rubber; restricts tire regrooving and camelback splitting; limits and prohibits use in specific terms; use forms PD-49, 322, 330, 407 and 500 B. M-15-b-1 Amend. #16 revises List. 3 of rubberized fabrics for protective clothing.

Safety Equipment—L-114 Int. #1 makes clear intent to exclude certain measuring and indicating instruments from definition of "safety equipment."

Saws (Manually Operated Wood and Special Purpose)—L-157 Sched. #111 lists types, grades, sizes, etc. for manufacture after Oct. 18.

Softwood Lumber—M-208 Amend. #1 prohibits replacement of inventory sold

from lists B and C and of inventory delivered for List A uses only if delivered after September 1; permits extension of ratings to replace Class 1 deliveries made after Sept. 1.

Shearlings—M-94 Amend. #1 redefines definitions to exclude from provisions of order those unsuited for flying suits.

Sheep Intestines—M-220 restricts use, sale and delivery for manufacture of surgical gut.

Silicia Gel—M-219 establishes complete allocation control; use forms PD-600 and 601.

Silver—M-199 Int. #1 clarifies meaning of "put into process" as covering only the manufacturer's first processing and does not apply to reforming of scrap. M-199 Amend. #1 clarifies meanings and terms of order. M-199 (amended) extends cut-off date from Oct. 1 to Nov. 15; redefines "manufacturer" to include laboratories and repair shops; further defines "assemble"; removes "church goods" from restricted uses; allows for sale of excess stocks to A-3 rated orders to a supplier or to Metals Reserve Co.

Sole Leather—M-80-c directs tanners to set aside 15% of October production of manufacturers bends.

Spices—M-127 (amended) establishes quota, distribution and inventory restrictions for bulk dealer, packer, receiver and industrial user. M-127-b establishes quota percentages for 4th quarter and following quarters, of eight spices for packer, receiver or industrial (Continued on page 60)

SOUTHLAND PRODUCTS

—WELDED OR RIVETED—



We now manufacture and offer to the trade tanks in all sizes for pressure or gravity work. Also other steel equipment of either

WELDED OR RIVETED CONSTRUCTION

This applies to field as well as shop built equipment.

Write us for information and quotations.

CHATTANOOGA BOILER & TANK CO.
CHATTANOOGA, TENN.

DAVIS CYPRESS TANKS

IN THE THICK OF DEFENSE WORK

Not only for private plants engaged in defense work, but for the U. S. Government itself. Both classes know the utility of cypress tanks. We know how to build them. Wooden pipe also. Send for catalogue.



G. M. DAVIS & SON
P. O. Box 5, Palatka, Florida



BELMONT IRON WORKS

PHILADELPHIA NEW YORK EDDYSTONE

Southern Sales Offices, Charlotte, N. C.

Engineers • Contractors • Exporters

STRUCTURAL STEEL
BUILDINGS AND BRIDGES
RIVETED-ARC WELDED
BELMONT INTERLOCKING
CHANNEL FLOOR

Write for Catalogue

Main Office—Philadelphia, Pa.
New York Office—44 Whitehall St.

CONVERSE BRIDGE & STEEL CO.

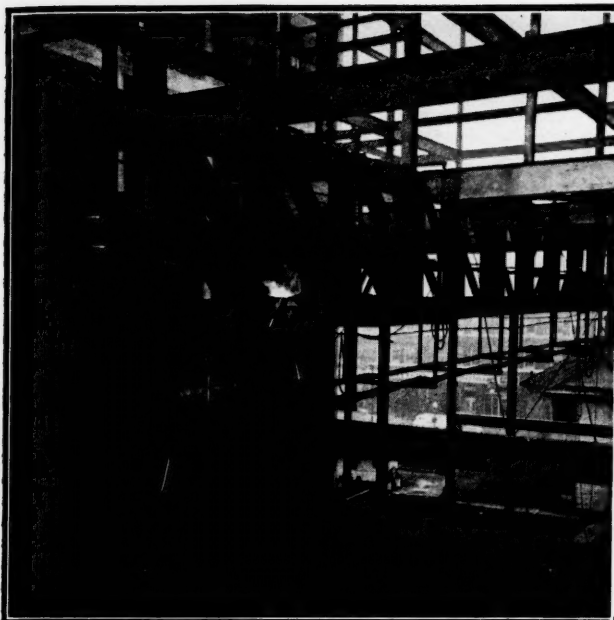
Chattanooga, Tennessee

Structural Steel for all Industrial Structures,
Buildings and Bridges

LARGE STOCK FOR IMMEDIATE SHIPMENT

GLAMORGAN PIPE & FOUNDRY CO.

LYNCHBURG, VA.



Unusually
Heavy Trusses
Electric Arc Welded

Over the Auditorium of the
George Washington Hotel
Jacksonville, Florida

**BETTER CONSTRUCTION
AT LOWER COST**

• • •

THE AETNA STEEL CONSTRUCTION CO.
JACKSONVILLE, FLORIDA

**STRUCTURAL for BUILDINGS
STEEL and BRIDGES**

Capacity 1000 Tons per Month. 3000 Tons in Stock

Carolina Steel and Iron Company

The Largest Steel Fabricators in the Carolinas

Greensboro North Carolina
S. C. Rep. Edward McCrady, 307 Allen Bldg., Greenville, S. C.

**Bristol Steel & Iron Works, Inc.
STRUCTURAL STEEL**

For Buildings, Bridges and All Industrial Purposes
BRISTOL, VIRGINIA-TENNESSEE

District Sales Offices:
431 Third Nat'l Bank Bldg., NASHVILLE, TENN. 501 Public Service Bldg., ASHEVILLE, N. C.

Tank Builders For Over 80 Years!



**A
40,000 Gallon
Bottle!**

This water tank, designed, constructed and erected by COLE, not only provides fire protection but outstanding publicity. We have made tanks in other odd shapes—bottles, etc. Does YOUR product lend itself to such unusual advertising?

Cole Tanks

Tanks of any kind and size for any purpose designed and constructed by us—storage, water, fuel oil, acid, chemicals, etc. Let our Engineering Department study your needs.

OTHER COLE PRODUCTS

Towers	Kettles	Digestors
Standpipes	Vats	Storage Bins
Smokestacks	Air Receivers	Fabricated Framework

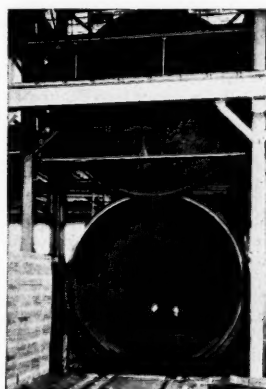
Write for "Tank Talk"—No. 24-D

R. D. COLE MANUFACTURING CO.

ESTABLISHED 1854

NEWNAN GEORGIA

Lancaster
TANKS



15'3" O.D. x 40' Long Vulcanizer

ELEVATED TANKS—PRESSURE TANKS—STEEL STORAGE TANKS—PROCESS TANKS—BUTANE-PROPANE TANKS—STANDPIPES—RETORTS—BINS—EXTRACTORS—BARGES—DREDGE PIPE AND ACCESSORIES—WELDED PIPE—RIVETED PIPE.

General Steel Plate Construction
designed for your requirements.

LANCASTER IRON WORKS, INC.
LANCASTER, PENNSYLVANIA

New Priorities Put In Effect During September

(Continued from page 58)

user with specified variations.

Steel—M-21 Int. #1 states that "Steel" and "Iron Products" do not include salvage or used materials. M-21-d Int. #1 classifies formed moulding as fully fabricated article. M-21-f revoked effective Sept. 3.

Steel Shipping Drums—L-197 lists items not to be packed in new or used drums; restricts sale and delivery; permits use for all types storage if less than 5 used; governs in case of inconsistency with M-45. L-197 Amend. #1 requires drums to bear letter "X" embossed on bottom plate.

Strategic Materials Imports—M-63 (as amended) Amend. #5 adds more items to List I, II and III. M-63-a (as amended) exempts materials on List III of M-63 from provisions of order subject to certain conditions. M-63 (amended) makes changes and additions in Lists I, II and III. M-63-c prohibits importation of mica from India and Brazil except by specific authorization. M-63-d exempts from provisions of M-63, mail shipments of less than \$100, samples or gifts for personal use of less than \$200 and gifts for personal use by or to members of armed forces.

Tea—M-111 Amend. #3 permits packers to deliver to wholesalers even if they formerly delivered to retailers or consumers; restricts inventory of importers and packers and freezes green tea for allocation.

Theobromine and Caffeine—M-222 establishes complete allocation control; use forms PD-600 and 601.

Tinned and Detinned Scrap—M-72-A restricts delivery, acceptance and use; establishes procedure to use used tin cans; restricts sale of detinned scrap.

Toiletries and Cosmetics—L-171 Int. #1 states purposes of order more clearly and furnishes illustrative examples. L-171 Amend. #1 to Sched. #2 defines "size" as volumetric capacity of container and decides that where two or more varieties of a product in different physical form are packed, each may be regarded as a separate product. L-171 Amend. #1 Sched. #1 permits persons who distributed samples during 1941 to include bulk quantity which went into such samples in determining quota under the order.

Track-Laying Tractors—L-53-b Int. #1 permits delivery of repair parts directly to consumers.

Turbo-Blowers—L-163 Amend. #1 clarifies "critical turbo-blower" as new reconditioned or used centrifugal or rotary blower or exhauster with capacity 5,000 cubic feet per minute or more at total equivalent sea level air pressure of 1½ lbs. or more except such equipment for Navy, etc.

Utilities (Maintenance, Repair and Supplies)—P-46 (amended) Amend. #4 permits utilities to extend highest rating assigned to housing project to materials for utility extensions to project. P-46 (amended) extends order to October 10. P-46-b establishes conditions under which gas or electric ranges may

be connected in dwelling of domestic consumer.

Western Hemlock Aircraft Logs—M-229 establishes complete allocation control; use forms PD-652 and 653.

Wood Upholstered Furniture—L-135 Amend. #1 redefines "reupholsterer" and establishes further restrictions and prohibitions. L-135 Int. #1 clarifies what operations can be included in assembly of final fabric covers.

Zinc—M-11-b (amended) prohibits use after Oct. 10 in manufacture of closures for glass containers which is only item on new List A-1 of prohibited uses.

Baltimore Steel Company Gets Army-Navy "E"

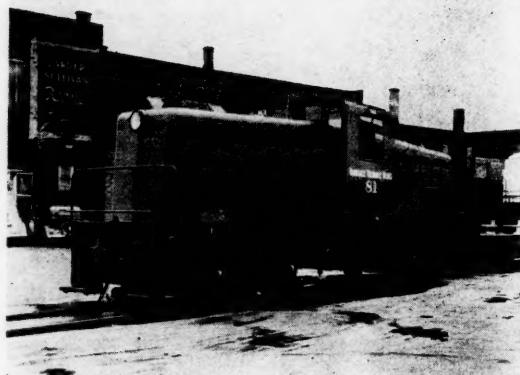
Rustless Iron and Steel Corporation of Baltimore and the largest exclusive producer of stainless steel, received the Army-Navy "E" pennant, as several thousand employees, guests and officials from various Federal, State and local government agencies lauded the company's performance and its contribution to the war program.

Rear Admiral A. H. Van Keuren, chief of the Navy's Bureau of Ships, presented the pennant to C. E. Tuttle, Rustless president and Col. R. W. Kliefkohl, director of supply and services for the Third Service Command, represented Under Secretary of War Patterson in presenting "E" pins to seventeen workers.

IN THE BATTLE OF PRODUCTION THERE IS NO RETREAT

America is so completely committed to the struggle for survival as a free nation that any lagging looms in the light of a major disaster. But there is no lagging when WHITCOMB DIESEL LOCOMOTIVES are on the job. They are always ready for action and are mighty easy to handle. The WHITCOMB LOCOMOTIVE has the power to move more tonnage faster—helping to step up production schedules. The ruggedness to stay on the job in the toughest kind of service—preventing loss of valuable time. Operating economy beyond fondest expectations—reducing costs to a minimum. These are some of the advantages Whitcomb owners are praising.

Send for descriptive literature and learn how WHITCOMB can help you in the Battle of Production.



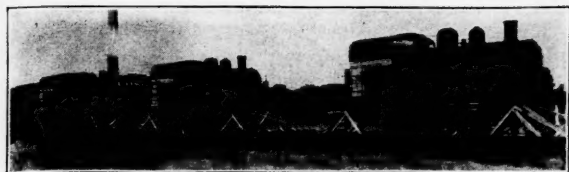
DIESEL—GASOLINE—ELECTRIC—The products of a pioneer.



THE WHITCOMB LOCOMOTIVE CO.

ROCHELLE, ILL.
Subsidiary of THE BALDWIN LOCOMOTIVE WORKS

The GLOBAL VIEWPOINT IS NOT NEW TO US



On Their Way to Service that COUNTS

During more than forty years, Davenport Locomotives have measured up to the toughest of jobs on every continent and in virtually every industry. No wonder then that Better-Built Davenports are in demand by the Army, Navy, our Allies, American producers of war goods, and builders of war facilities. Where vital transportation is of paramount importance you'll find the inbuilt STAMINA of Davenports an appreciated asset.



Better-Built DAVENPORTS

are AVAILABLE in


STEAM • GASOLINE • DIESEL
ELECTRIC or MECHANICAL DRIVE

EXPORT OFFICE **BROWN & SITES** 50 Church St., N. Y.
Cable Add. "Brosites"



DAVENPORT LOCOMOTIVE WORKS

A DIVISION OF DAVENPORT BESLER CORPORATION, DAVENPORT, IOWA



THE GEORGIA MARBLE COMPANY
Producers and Manufacturers of
GEORGIA MARBLE
TATE, GEORGIA
Atlanta New York

MOUNT AIRY GRANITE
Peerless Beauty and Strength
THE NORTH CAROLINA GRANITE CORP'N.
Mount Airy, N. C.

CRUSHED STONE
Only highest grades of crushed
LIMESTONE AND GRANITE
Meeting all specifications
CAPACITY—8000 tons daily
Blue Ridge, Va. Pembroke, Va. Pounding Mill, Va.
Boxley, Greenville County, Va.
W. W. BOXLEY & COMPANY
Boxley Building, ROANOKE, VA.

PERFORATED METAL



**INDUSTRIAL
ORNAMENTAL**
Any Metal
Any Perforation



Harrington & King
PERFORATING CO.
5631 Fillmore St., Chicago—114 Liberty St., N. Y.

HENDRICK
PERFORATED METALS

Screens and grilles
in all commercially rolled metals,
all standard and special designs.
Write for literature
HENDRICK MANUFACTURING CO.
44 Dundaff Street, Carbondale, Pa.
Manufacturers of Mitec Open Steel Flooring, Mitec
Shur-Site Treads and Mitec Armorgrids.

ERDLE
PERFORATED SHEET METALS

SIXTY YEARS' experience in
Metal Perforating is your assurance of
a satisfactory job.
Made to your specifications
and shipped promptly.
Metal Sample Plate on Request.
ERDLE PERFORATING COMPANY,
171 York Street, Rochester, N. Y.

PERFORATED METALS

For every purpose, Industrial and Ornamental

Steel, Stainless Steel, Monel Metal, Brass,
Copper, Bronze, Aluminum, Zinc, Lead, Tin
Plate and all other metals or materials
perforated as required, and for all kinds
of screens. Send for new Catalog.

CHARLES MUNDT & SONS
490 Johnston Ave., JERSEY CITY, N. J.

A Flying Boat Plant in the South

(Continued from page 31)

the world.

Then came an assignment to build a complete plane—a huge flying boat, which the U. S. Navy plans to use for transporting war materials to the far-flung action fronts of the United Nations.

Outwardly, this gigantic seagoing craft will be an almost exact duplicate of the "Excalibur," which was recently finished by Vought-Sikorsky at Bridgeport, Conn., for trans-oceanic commercial service. A second one is about to be launched. Both were built by hand from original designs by Vought-Sikorsky. Again, Nash-Kelvinator's first step has been to design the necessary plants and machinery to turn these flying boats out in quantity, and the company's engineers already are well along with this work. So large is this particular undertaking that several plants in various parts of the U. S. will be required to fulfill the contract and these are now being coordinated into a giant manufacturing "chain" to handle

this project for the Navy.

In connection with this expansion, it is interesting to note that as a means of side-stepping the national steel shortage, buildings at the New Orleans plant are being constructed of wood and are expected to be completed for production to start by the end of this year.

Although Nash-Kelvinator's major war effort is in the field of aviation, the company also is concerned with the manufacture of many other articles needed for victory. One war contract, that of manufacturing thousands of automobile trailers for the U. S. Army, already has been completed, and the plant where this work was done has been turned over to another armament maker for the assembly of tanks.

Still another plant has been in production for several months on a secret item calling for an extremely high degree of manufacturing precision. Manufacturing departments in other plants which cannot be immediately employed to further the company's aviation work are being used to turn out

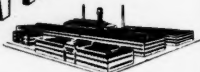
parts for other manufacturers of war material. A dozen or more different items are being made on such a sub-contractual basis by Nash-Kelvinator. Sections of the company's plants are also engaged in manufacturing essential parts for Army binoculars. The company's entire effort now is devoted to war work, commercial production of consumer goods having long since been terminated. Each of the corporation's eleven plants, including English and Canadian subsidiaries, is dedicated to the cause of the United Nations, states President George W. Mason.

Increasing Box Car Payloads

(Continued from page 45)

bombs; artillery shells; enamel stoves; water heaters; cumbersome, 1800 lb. gas tanks; transformers; "jeep" parts; refrigerators; furniture; pulp board; mosaic tile; steel conduits; electrical goods; farm implements; rice; lamps and innumerable other types of loads. Odd sizes and shapes present no barrier in the use of this equipment.

RIGHT DOWN OUR PRODUCTION ALLEY



*We want
WAR SUB-CONTRACT work!*

We need work—you need help—let's get together.

Stewart has enormous manufacturing and ample shipping facilities for production runs of units or parts of units fabricated from angles, flats, tees, rounds, squares, sheets, strips, and plates involving the use of equipment listed at the right.

Stewart offers competent engineering service; on time deliveries; best workmanship and the highest financial rating obtainable. When writing, please send specifications and complete information.

PRODUCTION FACILITIES

Punch Presses • Shears
Power Brakes • Spot,
Arc and Gas Welders
Drill Presses • Bull
Dozer Forming Equipment • Automatic
Saws • Heat Treating
Furnaces • Finishing
Equipment • Tool
Room Equipment.

Stewart
FABRICATORS OF
IRON • STEEL • WIRE
ANGLES • FLATS • ROUNDS • SQUARES • TEES • STRIPS • SHEETS • PLATES

THE STEWART
IRON WORKS CO. Inc.
1963 Stewart Block
Cincinnati, Ohio



Mr. Check says:

**"J&L PERMASET
Pre-formed Wire Rope**

Quickly available
from local stocks."



JONES & LAUGHLIN STEEL CORPORATION
AMERICAN IRON AND STEEL WORKS
GILMORE WIRE ROPE DIVISION • PITTSBURGH & MUNCY, PA.



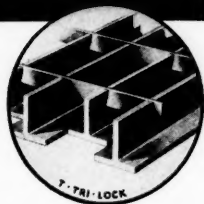
Specify
TRI-LOK

OPEN STEEL FLOORING • SAFETY STEPS
CONCRETE ARMORING T. TRI-LOK

DRAVO CORPORATION
300 PENN AVENUE, PITTSBURGH, PA.
REPRESENTATIVES IN PRINCIPAL CITIES



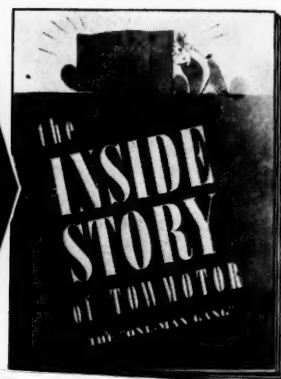
Full descriptive catalog
of Tri-Lok Grating, Safety
Treads and other prod-
ucts on request.



HERE'S YOUR
TEXTBOOK ON
LIFT TRUCKS...

FREE

AT YOUR REQUEST



NEW...COMPLETE...Amplly Illustrated

IT'S A VALUABLE ADDITION TO YOUR BUSINESS LIBRARY

● The only book of its kind obtainable... a truly complete review of power lift truck principles and features of performance. Will help you evaluate and choose equipment to fit your needs—will show you exactly *what* you should expect from your lift trucks. Six complete sections... each one interestingly written and fully illustrated. It's a book that you'll value.

YOU SHOULD HAVE IT • Get yours Now

TOWMOTOR COMPANY

1221F E. 152nd STREET, CLEVELAND, OHIO

1905 **Strand** 1942
FLEXIBLE SHAFTS AND MACHINES
MANY TYPES AND SIZES

HORIZONTAL

VERTICAL

ROTARY
FILES

ROTARY
CUTTERS

Attachments
for

Hundreds
of
Operations

SEND FOR CATALOGUE.

N. A. STRAND & CO.
CHICAGO
5001-5009 NO. WOLCOTT AVE.

CONCO HOISTS

"GIVE YOU A LIFT" ON
DEFENSE PRODUCTION



DIFFERENTIAL HOIST

Light weight; low cost; sturdily built. 1/4 through 2 ton capacities. Ideal over drill presses, lathes, milling machines, etc.

Write for illustrated literature today.

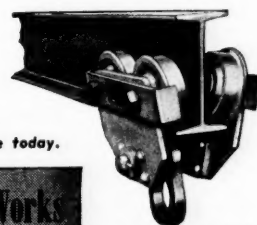


ELECTRIC HOIST

In 250, 500 and 1,000 lb. capacities. Push Button Control. Hook, Lug or Trolley Suspension. Simple, rugged construction.

SPUR GEAR HOIST

Fast, strongly-built. Capacities 1/4 through 20 tons. Widely used in Defense Production. Tested to 150% beyond rated capacity.



I-BEAM TROLLEYS

4 models. Plain or geared. Capacities 1/4 through 10 tons.

Conco Engineering Works

35 GROVE STREET

MENDOTA, ILLINOIS



Aluminium Production in Arkansas

(Continued from page 56)

the binding material. In view of the fact that such large quantities of carbon electrodes are consumed in the manufacture of aluminum, facilities have been provided at the Arkansas aluminum works for the manufacture of carbon electrodes.

The major item in the production of aluminum is, of course, electricity. One could burn a 40-watt light in his home for more than a week and a half without consuming any more electricity than is consumed in the manufacture of one pound of metallic aluminum.

Because of the large amount of electricity necessary and the fact that sufficient quantities were not readily available in Arkansas, the Arkansas aluminum plant presented an interesting problem. Steam driven turbine generators could not be delivered in sufficient time. Consequently, because of the large amount of natural gas available in this state at a very low price, 50 gas engines, each driving 750 kilo-

watt generators, and 18 gas engines equipped with 2250 kilowatt generators, were installed.

The Arkansas DPC plants were constructed and placed in operation in a little more than six months. They represent two of the twenty-one major plant projects the Aluminum Company is building for DPC. In addition, the Aluminum Company is completing seventeen major plant projects of its own involving the expenditure of \$250,000,000 which it is financing itself. The thirty-eight projects now underway bring the total acreage of floor space put under roof by Alcoa since January 1, 1940, to 536 acres.

By the middle of 1943 the aluminum producing plants in the United States will be manufacturing aluminum at the rate of 2,100,000,000 pounds annually. This vast amount of aluminum together with the increased fabricating facilities of the Aluminum Company and other fabricators in this country, will far exceed what the Axis Powers can hope to produce.

To coordinate the work of all its divisions in Arkansas, the Alumi-

num Company has appointed T. C. Jones as regional manager. Mr. Jones' headquarters are in Little Rock. The mining activities of the Republic Mining and Manufacturing Company, Alcoa mining subsidiary, are in the state of Arkansas under the direction of L. R. Branting; while Harry C. Slagle has charge of the aluminum works and L. H. Crudden the alumina works which Alcoa is operating for DPC.

New Industrial Plants and Expansions in the South

(Continued from page 43)

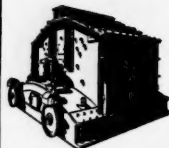
runs from Baton Rouge, La. to Greensboro, will be extended from local terminal on Winston-Salem Road on direct route of 175 miles of pipe to Richmond; line is a government project, being constructed for Defense Plant Corp.; S. R. Simmons, Constr. Supt.; Ed. Asher, operating superintendent.

Airline Service to Clarksburg, W. Va., Resumed

Service into Clarksburg, West Virginia, will be resumed by Pennsylvania Central Airlines on October 15.

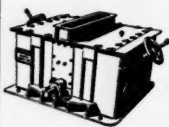
This stop on Pennsylvania-Central's route was temporarily suspended until improvements on the airport could be completed. It is now capable of handling the largest of commercial transport planes.

"PENNSYLVANIA" CRUSHERS



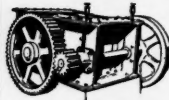
HAMMERMILLS

The Central Feed REVERSIBLE is the most outstanding advance in Hammermill design in 20 years. REVERSIBILITY is an exclusive "Pennsylvania" feature. For Limestones, Cement Rocks, Gypsums and wide variety of Chemicals and Industrial Minerals. Automatic hammer turning. Adjustable Cages . . . Tramp iron protection. Steelbuilt. Patented.



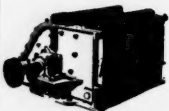
"IMPACTORS"

An advanced, new type that reduces by direct impact. For high Siliceous, Clinkers, Slags, Chrome and Manganese Ores, Furnace Refractories, etc. Makes "cubing" particle shape, not "silvery". Several sizes. Patented.



SINGLE ROLLS

An advanced design, specialized for Coal Preparation in Mines, Cleaning Plants, Gas Works and Power Plants. Sizes for Chemicals and Industrial Minerals. Automatic Tramp Iron Protection, quick adjustability from 1/4" to 8" sizing. Powerful Steelbuilt construction. Patented.



"GRANULATORS"

Granulate materials of medium hardness . . . Bituminous coal, . . . Gypsum Rock, etc., to produce sizes 1/8" to 2", with minimum fines and oversize. Operation practically dustless. Steelbuilt. Patented.



BRADFORD BREAKERS

Reduce R.O.M. for Steeler or Pulverizer feed with absolutely no oversize and low "overgrinding." Crush by gravity impact. Automatically eject, without damage, tramp iron, mine debris and hard rock. Low H.P. . . . slow speed . . . long life. Low up-keep. . . . rugged, . . . thoroughly dependable. 25 to 500 T.P.H. Steelbuilt. Patented.

Bulletins are available to interested parties.

PENNSYLVANIA CRUSHER CO.
1705 Liberty Trust Bldg., Philadelphia, Pa.
Offices in Principal Cities
Associated with Fraser & Chalmers Engineering Works, London, England.

GARY GRATING & TREADS

GARY - WELDED
GARY - RIVETED
GARY - STAIR-TREADS
GARY - IRVING-DECKING

SEND FOR FREE SAMPLE &
— CATALOG —

STANDARD STEEL SPRING CO.

2700 EAST FIFTH AVENUE
GARY, INDIANA

Container Industry Meets War Conditions

(Continued from page 37)

in some instances, are being furnished by the glass container producers. The collapsible tube industry is producing tin and lead tubes for burn ointments, medicinal products, and of course, shaving cream and toothpaste.

The steel barrel and pail industries are making twice as many containers this year as in normal years. About 75 per cent of the total is going directly to the armed forces, while the need for the remaining 25 per cent can be traced indirectly to the war effort.

Among the steel containers going directly to war are those for oil and grease for our tanks and airplanes, as well as for some food

items such as shortenings. The indirect war items include paints, petroleum products, and fuel for our productive machinery. The tight cooperage industry is also making a substantial contribution to the number of containers provided for those purposes.

Paper container producers are playing an important role. Commodities like flour, feed, and fertilizer are moved in bags, which in the absence of burlap, are being made from paper, and in some cases, osnaburg. Paper "cans" with metal ends are going to many new uses, including baking powder and some dried foods. Folding and set-up boxes have taken on new functions in substituting for cans, while fibre shipping containers have been rapidly substituting for

wood, which today is one of the most scarce materials.

Wood, as in the last war, is used for ammunition boxes, and to crate tanks and planes in addition to the normal function of carrying fruit and produce in baskets, hampers, etc.

Although the conversion of the containers industries to direct war goods has been relatively small, there have been some exceptions. Extensive stamping facilities exist in the can and shipping container industries, for instance, and these in many cases have been turned to the stamping of tank and gun parts. Some of the larger companies have converted their machine shops to production of such items as gun mounts, breech blocks, and shell making machines.

SCREWS

CONSULT US FIRST
OR SUBMIT BLUE PRINTS

SAMUEL J. SHIMER & SONS MILTON PA.

GALVANIZING

Have it done by Philadelphia's OLDEST,
the Country's LARGEST
—HOT DIP JOB GALVANIZER—

Joseph P. Cattie & Bros., Inc.
Caul & Letterly Sts., Philadelphia, Pa.
GALVANIZED PRODUCTS FURNISHED



While cosmopolitan in its general appeal, and modern up to this moment in its equipment, there is a peculiar flavor of The Old South here which Southerners are quick to note and appreciate. They feel at home and come back to us again and again.

Rates \$3.00 per day and up. Every room with bath or shower.
Centrally located.

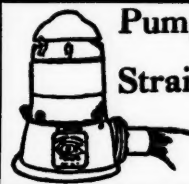
The Southern Hotel
BALTIMORE

McLANAHAN EQUIPMENT

ROCK—SAND—GRAVEL

Single and double roll and jaw crushers, hammer mills, super dry pans, steel log washers and scrubbers, sand drags, revolving and vibrating screens, elevators, conveyors, dryers, jigs, hoists. Complete portable, semi-portable and stationary crushing, screening and washing plants for different capacities of any materials.

McLanahan & Stone Corporation
Established 1833
Hollidaysburg, Pennsylvania



Pumps— Deep-Well Plunger and Turbine

Strainers— and other well supplies

WATER PRESSURE SYSTEMS

A. D. COOK, Inc.
Lawrenceburg, Indiana

FINE GEARS

of all Materials—All Types and Sizes

Spur Gears— $\frac{1}{8}$ in. to 30 ft. in diameter
Bevel Gears— $\frac{1}{8}$ in. to 12 ft. in diameter
Spiral Gears— $\frac{1}{8}$ in. to 10 ft. in diameter
Worm gears any practical size. Backs curved or straight. Fast Delivery—Fair Prices

THE EARLE GEAR & MACHINE CO.
4719 Stanton Ave., Philadelphia, Pa.
149 Broadway, New York City

EARLE GEARS

Ornamental and Industrial PERFORATED METALS

We carry a large stock for immediate shipment.
Send for Our Catalogue.

Manhattan Perforated Metal Co., Inc., 43-17 37th St., L. I. City, N. Y.

RECIEVER'S SALE OF VALUABLE PROPERTY

The undersigned Receiver offers for sale at private bids the property of Falling Spring Lime Company, Inc., situated on C & O Railroad about 8 miles North of Covington, Virginia. Property consists of nearly 700 acres of land with large deposits of lime on same, buildings, hydro-electric power plant, lime plant, about 2 miles narrow gauge railroad, large quantity of machinery, equipments, tools, etc.—Ready to operate—All bids must be received not later than Oct. 31, 1942, twelve o'clock midnight—Bids treated confidentially, and the right is reserved to reject any or all bids. Further information furnished upon request.

Geo. A. Revercomb, Jr.,
Receiver of
Falling Spring Lime Company, Inc.
Covington, Virginia.

INDUSTRIAL SITE FOR SALE

Available for prompt possession, on Highway adjacent to Navy Yard, on N & P Belt Line, Portsmouth, Virginia, consisting of—4 acres with 2 large iron-clad warehouses, 1 large two-story lumber shed, office building and cottage.

Address: McEWEN LUMBER COMPANY
High Point, N. C.

WHEN YOU TRAVEL to PITTSBURGH
STOP AT
**HOTEL
PITTSBURGH**
Pittsburgh's
Newest!
Popular with War-Busy Officials

Rates	
SINGLES	DOUBLES
\$3.30 to \$4.40	\$5.00 to \$6.50

Radio & Bath in Every Room

A KNOTT HOTEL • JOS. F. DUDDY, Mgr.

■ Inventions for Sale

MANUFACTURERS—Write for our FREE Classification Sheet of Inventions for Sale, covering 135 main subjects, and in one or more of which you will doubtless be interested. ADAM FISHER CO., 378 Enright, St. Louis, Mo.

■ Positions Wanted

EXECUTIVE—AGRICULTURAL
Capable of assuming full responsibility in development and management of a large project. Commanding personality with broad education and business experience.
Address No. 9536 c/o Mfrs. Record

■ Patent Attorneys

EATON & BROWN, Patent Attorneys,
1408-R Johnston Bldg., Charlotte, N. C.,
514 Munsey Building, Washington, D. C.,
417 Wachovia Bldg., Winston-Salem, N. C.

Experienced patent & trade-mark counsel.
Established 1915. Ask for booklet and
Schedule of Government & Attorney's Fees.
LANCASTER, ALLWINE & ROMMEL
445 Bowen Bldg., Washington, D. C.

Statement of the ownership, management, circulation, etc., required by the Acts of Congress of August 24, 1912 and March 3, 1933, of MANUFACTURERS RECORD, published monthly at Baltimore, Md., for October 1, 1942.

State of Maryland,
City of Baltimore,
Before me, a Notary Public, in and for the State and City aforesaid, personally appeared C. J. O'Donnell, who having been duly sworn according to law, deposes and says that he is the Assistant Treasurer of the MANUFACTURERS RECORD, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in Section 537, Postal Laws and Regulations, to wit:

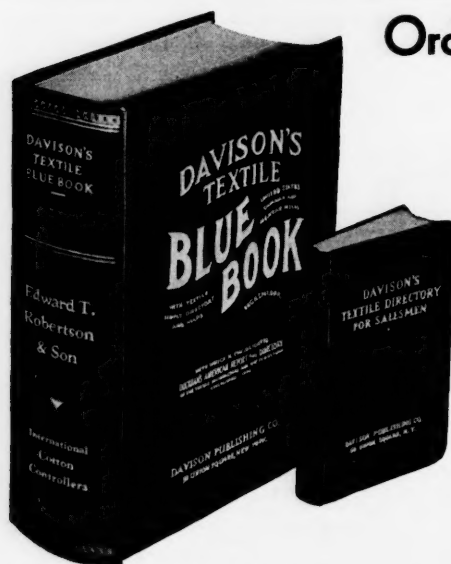
1. That the names and addresses of the publisher, editor, managing editor and business managers are: Publisher, Manufacturers Record Publishing Co., Baltimore, Md.; editor, Frank Gould, Baltimore, Md.; managing editor, Eric Morrell, Baltimore, Md.; business manager, Frank Gould, MANUFACTURERS RECORD, Baltimore, Md.

2. That the owner is Manufacturers Record Publishing Company, Baltimore, Md.; Stockholders are: Frank Gould, MANUFACTURERS RECORD, Baltimore, Md.; K. Marchant, Maplewood, N. J.; Wm. M. Beury, MANUFACTURERS RECORD, Baltimore, Md.; R. Lisle Gould, MANUFACTURERS RECORD, Baltimore, Md.; Fleet-McGinley, Inc., Baltimore, Md.

3. That the known bondholders, mortgagees and other security holders owning or holding 1% or more of total amount of bonds, mortgages or other securities are: Frank Gould, Kerfoot Marchant, Richard W. Edmonds, Exec., Est. of Richard H. Edmonds, Est. of Isaac S. Field, Estate of Mary E. Edmonds.

4. That the two paragraphs next above, giving the names of the owners, stockholders and security-holders, if any, contain not only the list of stockholders and security-holders as they appear upon the books of the company, but also, in cases where the stockholder or security-holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security-holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona-fide owner; and this affiant has no reason to believe that any other person, association or corporation has any interest, direct or indirect, in the said stock, bonds or other securities than as so stated by him.

C. J. O'DONNELL,
Assistant Treasurer.
(Sworn to and subscribed before me this 21st day of September, 1942.)
VIRGINIA A. COPSEY.
(My commission expires May 3rd, 1943.)



Order the New Seventy-Seventh Year Textile Blue Book

Now ready for delivery. It reports the entire textile manufacturing industry with dyers and finishers and all allied firms and dealers.

You will want this important 77th year issue for your office and for reference every day. You will be proud to own a copy of this valuable book and its small cost should be returned to you many times over.

For selling—for buying—for reference and for mail campaigns, in these active textile days—you need this latest revision of the entire trade. The large edition in your office—the salesmen's size for your men on the road, will easily return their small cost!

Thumb indexes for instant reference to any section.
Gold and Sturdite bindings.

Deluxe office edition	\$8.25
Handy size (not shown)	\$5.75
Salesmen's edition	\$4.50

The New 77th Year Edition is new in all the essential things that count in a complete guide to the Textile Industry. New from cover to cover. New with over eight thousand revised mill reports. New information on some twenty-four thousand dealers and firms in allied lines. New in up-to-date information on markets you can sell with profit. New in giving thousands of sources where you can buy with savings.

Old books are obsolete—expensive to use and unreliable! An enormous number of changes and great mass of new data is now available.

DAVISON PUBLISHING COMPANY
Executive, Production and Sales Office at RIDGEWOOD, NEW JERSEY, U. S. A.

MANUFACTURERS RECORD FOR